

Appendix A

Design Drawings

LINETYPE LEGEND

-E-T-CTV-?	EXISTING ELECTRICAL/TELEPHONE/CABLE TELEVISION/UNKNOWN (BURIED)
-SS-D-W-IW-G-	SANITARY SEWER/DRAIN/WATER/IRRIGATION WATER/GAS (BURIED)
- - - - -	NEW CULVERT
- - - - -	EXISTING CULVERT
- - - - -	OVERHEAD ELECTRIC/TELEPHONE
- x - - -	4' HIGH ACCESS CONTROL FENCE
- o - o - o -	TEMPORARY 6' CHAIN LINK ACCESS CONTROL FENCE
-> -> -> ->	DRAINAGE DITCH
- - - - -	EDGE OF EXISTING ASPHALT
- - - - -	GRADE BREAK LINES
-> -> ->	ACCESS ROUTE LINE
- - - - -	PIPING TO BE REMOVED
- I - - -	LIMITS OF EXCAVATION SHIELDING
- -	ROOF LINES

PLAN VIEW

●	UTILITY POLE
N 1,085,156 E 452,599	SURVEY COORDINATE
↗	SLOPE/FLOW ARROW
Y	TOP OF SLOPE
●	SURVEY CONTROL POINT
WELL-1	WELL
FH	FIRE HYDRANT
EXISTING CONCRETE	EXISTING CONCRETE
NEW GRAVEL SURFACE	NEW GRAVEL SURFACE

DRAWING LEGEND

5210	EXISTING CONTOUR
- - - - -	INTERMEDIATE CONTOUR
- - - - -	PROPOSED CONTOUR
+	SPOT ELEVATIONS
□	BUILDING/STRUCTURE
- - - - -	V-DITCH

ABBREVIATIONS

AOC	AREA OF CONTAMINATION	NA	NOT APPLICABLE
CL	CENTER LINE	NIC	NOT IN CONTRACT
CONC.	CONCRETE	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	OC	ON CENTER
D&D	DEMOLITION & DECONDITIONING	PL	PROPERTY LINE
DIA. OR Ø	DIAMETER	PP	POWER POLE
E	EASTING	PVC	POLYVINYL CHLORIDE
ELEC	ELECTRIC	SAN	SANITARY SEWER
ELEV	ELEVATION	SHT.	SHEET
EXIST	EXISTING	SSD	SANITARY SEWER-CONCRETE
FL	FLOW LINE	SF	SQUARE FEET
HASP	HEALTH & SAFETY PLAN	TYP	TYPICAL
HDA	HOT DRAIN-STAINLESS STEEL	UG	UNDERGROUND
HDPE	HIGH DENSITY POLYETHYLENE	UST	UNDERGROUND STORAGE TANK
HIC	HIGH INTEGRITY CONTAINER	VCO	VOLUNTARY CONSENT ORDER
INV	INVERT	VOC	VOLATILE ORGANIC COMPOUNDS
IW	IRRIGATION WATER	W	WATER
LF	LINEAR FOOT	WAC	WASTE ACCEPTANCE CRITERIA
MH	MANHOLE	WDA	WARM DRAIN-STAINLESS STEEL
MIN	MINIMUM	WDC	WARM DRAIN-CAST IRON
MW	MONITORING WELL	WL	WATER LEVEL
MTL	METAL	N	NORTHING

SECTION

COMMON BORROW
TOPSOIL
UNDISTURBED SOIL
AGGREGATE BASE
GRAVEL OR DRAIN ROCK
CONCRETE
WATER LEVEL
TRENCH SHIELD

GENERAL NOTES

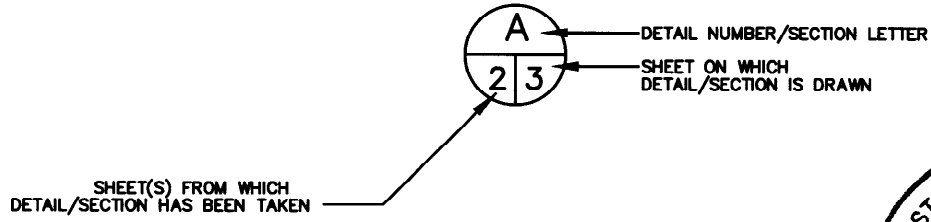
1. TAN TANK V-TANK AREA TOPOGRAPHIC SURVEY SURVEYED BY SUTHERLIN & GRADY. DATUM: NAD-27 STATE PLANE AND 1929 VERTICAL. SURVEY DATE: 04/19/01.

2. THE FOLLOWING IS THE LIST DRAWINGS PROVIDED BY INEEL AND USED BY WESTON TO IDENTIFY AND LOCATE UTILITIES SHOWN ON THESE CONSTRUCTION DRAWINGS.

TITLE	INEEL DRAWING NO.	DATE
TAN RADIOACTIVE LIQUID WASTE UNDERGROUND PIPING 807 AREA	422643	3-88
TAN/TSF AREA FIRE WATER & UTILITY WATER SITE PLAN	423185	12-15-88
TAN RADIOACTIVE LIQUID WASTE UNDERGROUND PIPING PLAN	422642	3-88
TSF AREA WASTE LINE IDENTIFICATION	154298	11-15-71
ANP LIQUID WASTE TREATMENT PLANT BLDG. 616, PLANS, ELEVATIONS SECTIONS & DETAILS	106889	12-20-52
ANP ASSEMBLY & MAINTENANCE AREA LIQUID WASTE TREATMENT PLANT 616 PIPING PLAN	106892	12-20-52
ANP ASSEMBLY & MAINTENANCE AREA LIQUID WASTE TREATMENT PLANT 616 VESSEL DETAILS & ORIENTATIONS	106894	12-20-52
ANP ASSEMBLY & MAINTENANCE AREA LIQUID WASTE TREATMENT PLANT 616 PIPING SECTIONS	106893	12-20-52
TAN RADIOACTIVE LIQUID WASTE STORAGE AND TRANSFER SYSTEM	138651	11-3-82
3. ALL ACTIVE UNDERGROUND PIPING AND UTILITIES SHALL BE LOCATED AND DE-ENERGIZED PRIOR TO CONSTRUCTION BY ELECTRONIC LOCATING DEVICES OR EXPLORATORY EXCAVATIONS.

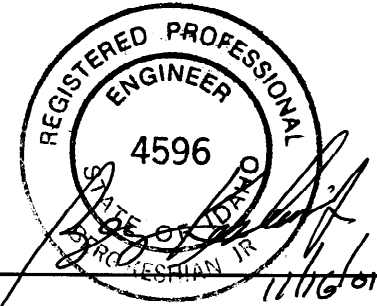
4. STORM WATER CONTROLS SHALL BE IN PLACE PRIOR TO START OF EXCAVATION WORK.

SECTION AND DETAIL SYMBOL



LINE IDENTIFICATION

- HD - HOT DRAIN
- WD - WARM DRAIN
- SW - SERVICE WASTE (COLD DRAIN)
- SS - SANITARY SEWER

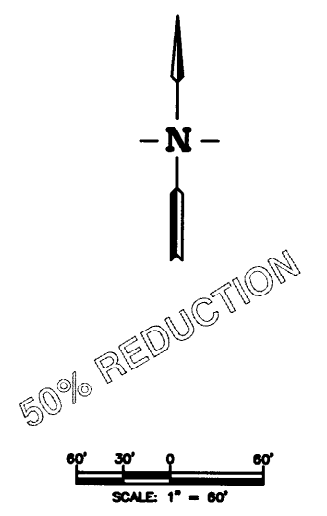
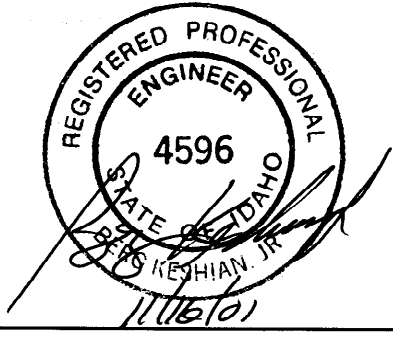
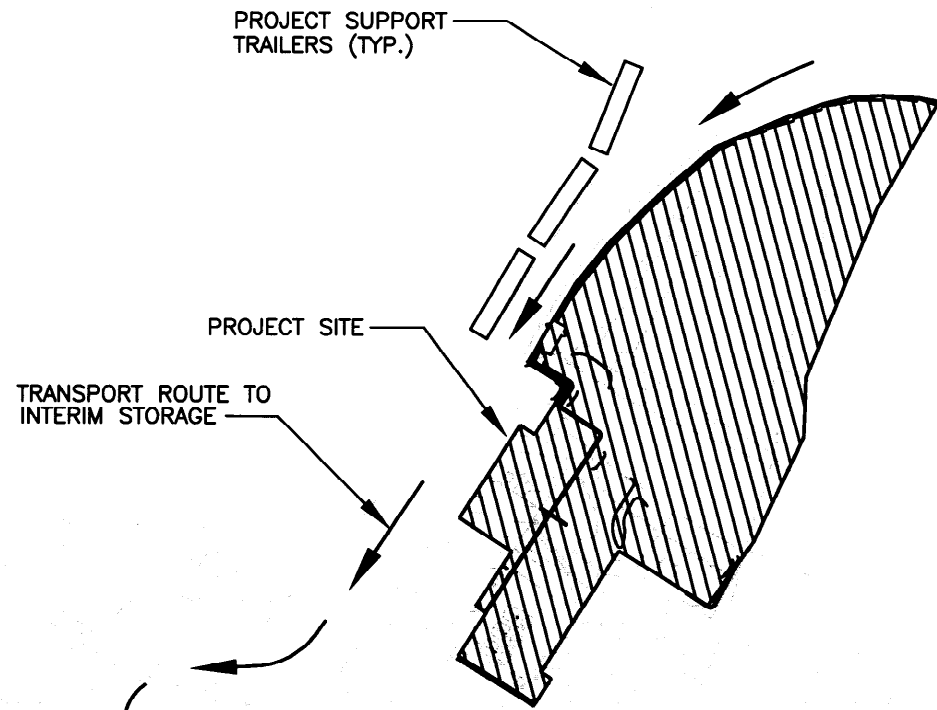


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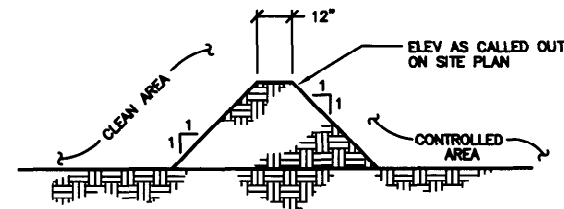
V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
GENERAL NOTES. SYMBOLS, AND ABBREVIATIONS	
DRAWING NO.: ABQ 00002-R00-T02 PROJECT NO.: 12393.002.001	SHEET # 2 of 20



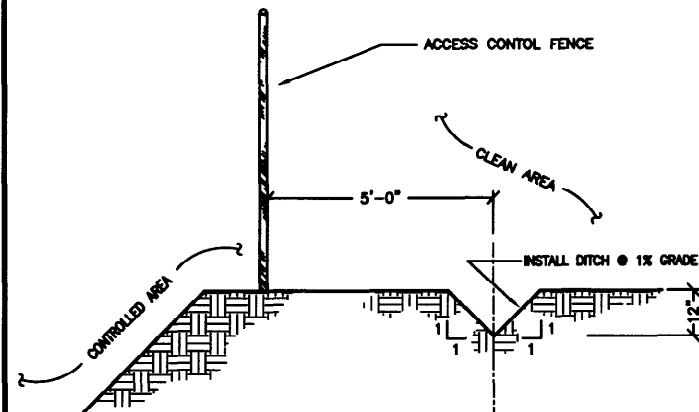
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							Checked by: D. Brennecke	11/16/01
							Project Manager: B. Keshian	11/16/01
							Client Approval:	

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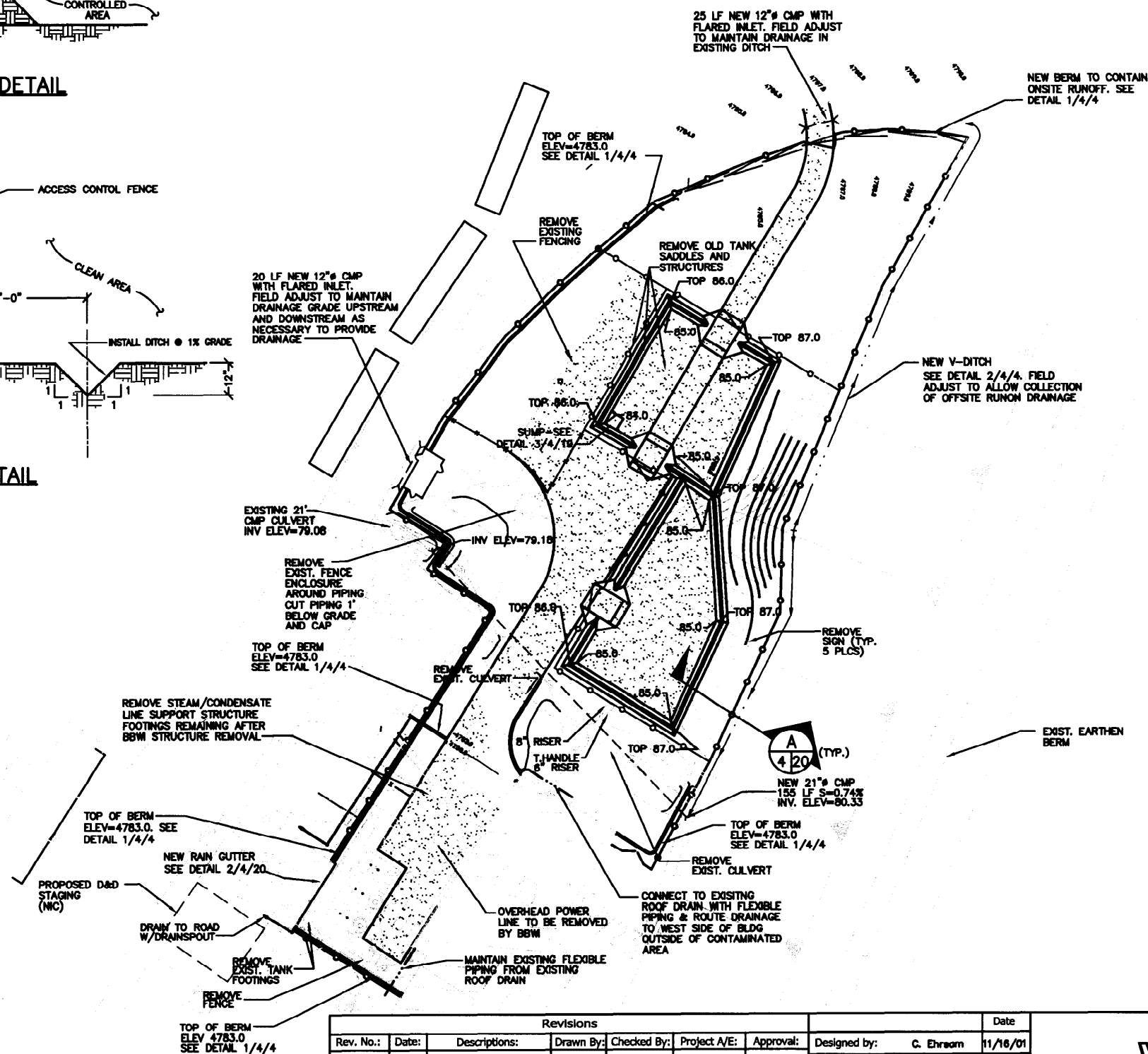
V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
SITE PLAN	
DRAWING NO.: ABQ 00003-R00-C01	SHEET #
PROJECT NO.: 12393.002.001	3 OF 20



1 BERM DETAIL
4/4

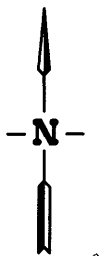


2 V-DITCH DETAIL
4/4

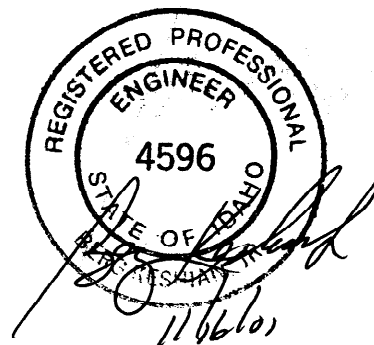


CONSTRUCTION NOTES:

1. OVERHEAD STEAM/CONDENSATION AND POWER LINES AND SUPPORT STRUCTURES ARE TO BE REMOVED BY BWM PRIOR TO START OF WORK.
2. MINIMUM ONE FOOT (1') OF COVER IS REQUIRED OVER ALL NEW CMP CULVERTS.
3. PLACE ACCESS CONTROL FENCE AND "T" POSTS AROUND 8" RISER AND T-HANDLE 8" RISER TO PROTECT FROM EQUIPMENT DAMAGE. MAINTAIN 3' CLEAR SPACE BETWEEN FENCE AND RISERS.
4. PROVIDE GENERAL GRADING AS NECESSARY TO ALLOW FOR ADEQUATE WORKING SURFACES. ALL GRADING SHALL OCCUR IN A MANNER THAT DOES NOT ALLOW DRAINAGE TO RUN OFF BEYOND THE PROJECT BOUNDARIES.
5. SPOT ELEVATIONS SHOWN ON SITE PLAN REPRESENT FINISHED GRADES.
6. BENCHMARK FOR SURVEY CONTROL WILL BE ESTABLISHED BY INEEL PERSONNEL.



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SCALE: 1" = 30'



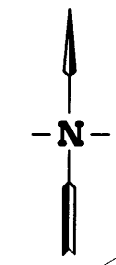
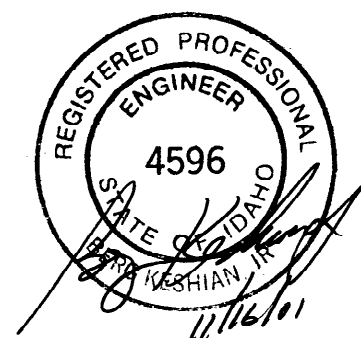
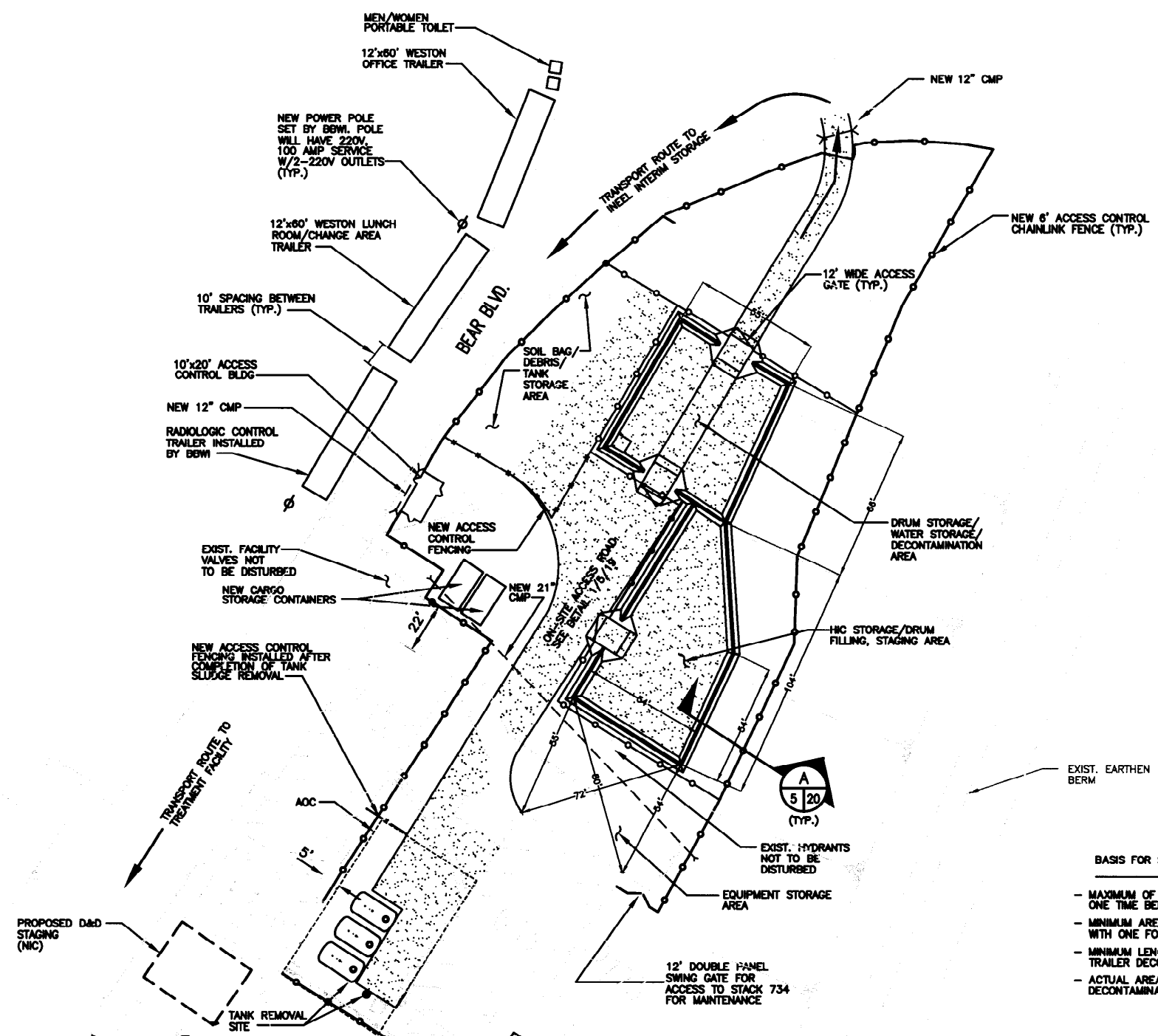
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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
GRADING AND SURFACE DEMOLITION PLAN	
DRAWING NO.: ABQ 00011-R00-C02	SHEET #
PROJECT NO.: 12393.002.001	4 OF 20

PROJECT PARKING

- NOTE:
1. SHIELDING SHALL BE PLACED AROUND PERIMETER OF DRUM STORAGE/WATER STORAGE/DECONTAMINATION AREA AS REQUIRED TO CONTROL RADIATION DOSE EXPOSURE.
 2. ALL DIMENSIONS SHOWN ON DRAWING SHALL BE INSTALLED WITHIN ± 1 FOOT.



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30' 15' 0' 30'

SCALE: 1" = 30'

- BASIS FOR SIZING DRUM STORAGE/WATER STORAGE/DECONTAMINATION AREA
- MAXIMUM OF 10 DRUMS WILL BE STORED IN AREA AT ONE TIME BEFORE MOVING DRUMS TO INTERM STORAGE.
 - MINIMUM AREA REQUIRED FOR SECONDARY CONTAINMENT WITH ONE FOOT CONTAINMENT DEPTH IS 1,500 SF.
 - MINIMUM LENGTH OF AREA IS 80' TO ACCOMMODATE SEMI-TRAILER DECONTAMINATION ACTIVITIES.
 - ACTUAL AREA SHOWN FOR DRUM STORAGE/WATER STORAGE/DECONTAMINATION AREA IS 3,000 SF.

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							R. Ederer	11/16/01
							JMM/KDF	11/16/01
							D.Brannock	11/16/01
							B. Keshian	11/16/01

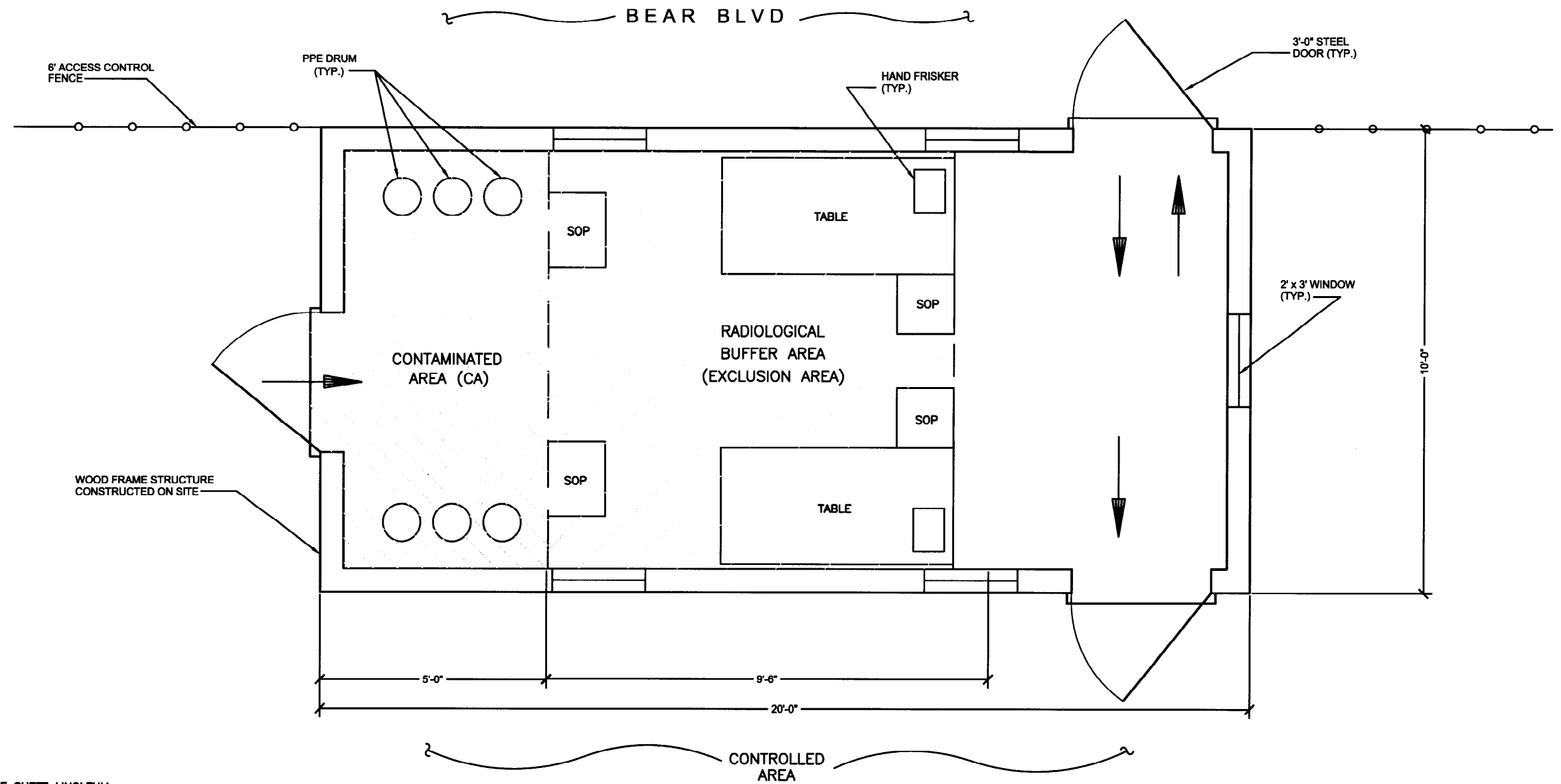
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V-TANK REMEDIATION PROJECT
IDAHO FALLS, IDAHO

**ACCESS CONTROL & SITE
LAYOUT PLAN**

DRAWING NO.: ABQ 00004-R00-C03
PROJECT NO.: 12393.002.001

SHEET # **5 OF 20**



NOTE:

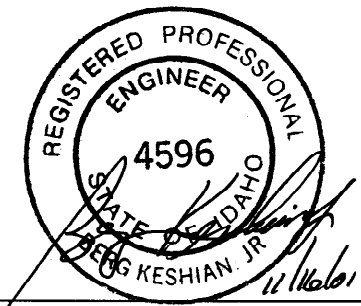
1. FLOOR COVERING WILL BE SHEET LINOLEUM
2. BLDG WILL REQUIRE 110V POWER FOR INTERIOR LIGHTING & MISC. POWER REQUIREMENTS.

LEGEND:

- SOP STEP OFF PAD
CA CONTAMINATION AREA
RBA RADIOLOGICAL BUFFER AREA
PPE PERSONNEL PROTECTIVE EQUIPMENT

ACCESS CONTROL BUILDING PLAN

SCALE: 3/4"=1'-0"

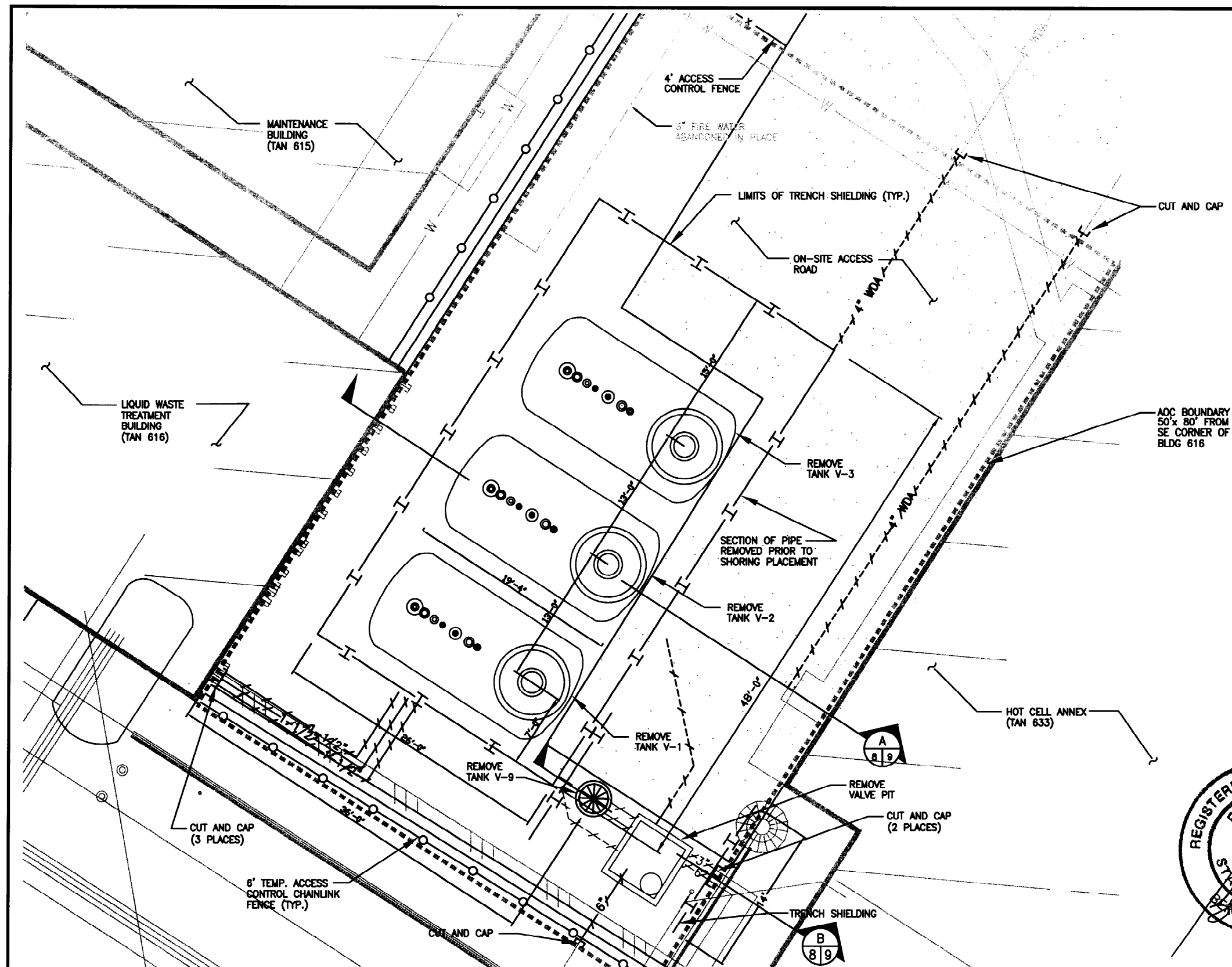


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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
ACCESS CONTROL BUILDING PLAN	
DRAWING NO.: ABQ 00012-R00-C04 PROJECT NO.: 12393.002.001	SHEET # 6 OF 20



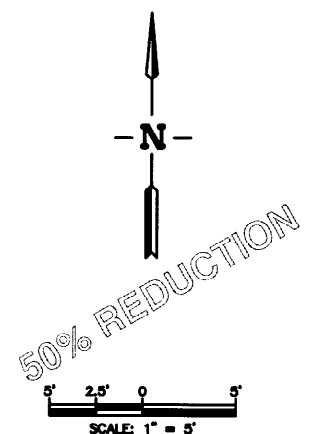
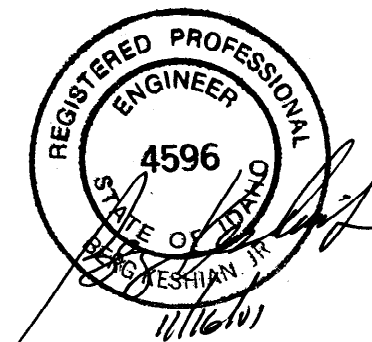
NOTES

1. PIPING REMOVED AS PART OF THE PIPE REMOVAL PLAN IS NOT SHOWN ON THIS DRAWING (SEE SHEET 7 OF 19).
2. ALL PIPING AND TANKS SHALL BE REMOVED IN THE ORDER INDICATED IN THE MANDATORY REMOVAL SEQUENCE LEGEND. REMOVAL OF SUBSEQUENT ITEMS SHALL NOT COMMENCE UNTIL THE PRECEDING REMOVAL ITEMS ARE 100% COMPLETE.
3. VOLUNTARY CONSENT ORDER PIPING SHALL BE PACKAGED SEPARATELY AND GIVEN TO BBWI FOR SUBSEQUENT TRANSFER TO THE INEL VCO PROGRAM.
4. HAZARDOUS CONSTITUENTS DECONTAMINATION SHALL BE CONDUCTED ON ALL EQUIPMENT AND PERSONNEL TO REMOVE ALL VISIBLE CONTAMINATION BEFORE EXITING THE NORTH END OF AREA OF CONTAMINATION (AOC).
5. PIPES TO BE CUT & CAPPED AT THE LIMITS OF THE AOC BOUNDARY SHALL BE CUT & CAPPED WITHIN 5' BEYOND THE AOC BOUNDARY.

MANDATORY REMOVAL SEQUENCE LEGEND

- ① SAND FILTER REMOVAL
- ② PIPING REMOVAL
- ③ V-3, V-2, V-1 TANK REMOVAL IN RESPECTIVE ORDER.
- ④ PIPING REMOVAL
- ⑤ V-9 TANK AND VALVE PIT REMOVAL
- ⑥ PIPING REMOVAL

- + - - - - VOLUNTARY CONSENT ORDER PIPING (ALL COLORS)
 + - - - - NON-VCO PIPING TO BE REMOVED



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Drawn by:	JMM/KDF	11/18/01
Checked by:	D. Brennecke	11/18/01
Project Manager:	B. Keshian	11/18/01
Client Approval:		

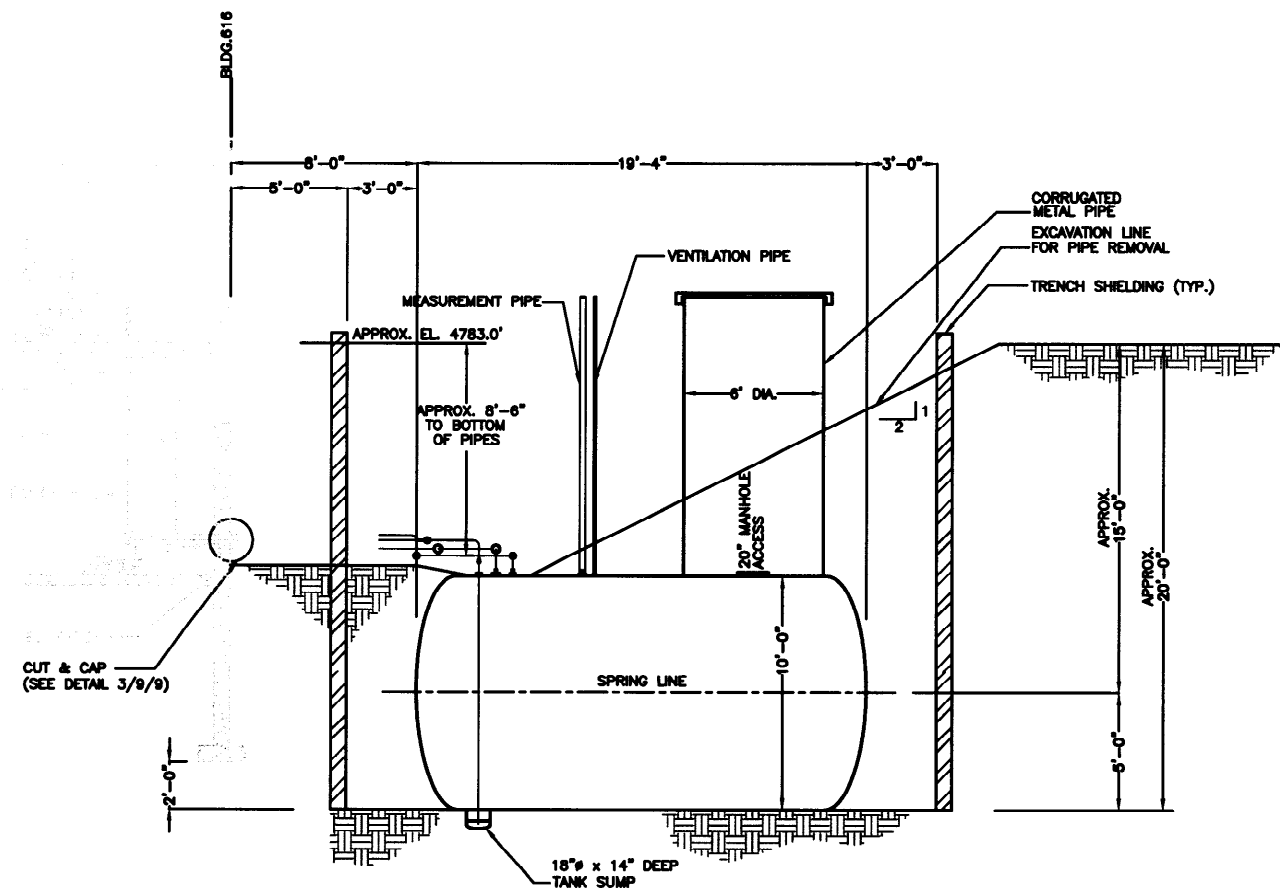
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V-TANK REMEDIATION PROJECT
IDAHO FALLS, IDAHO

V-1, V-2, V-3, & V-9 TANK
REMOVAL PLAN

DRAWING NO.: ABQ 00006-R00-C06
 PROJECT NO.: 12393.002.001

SHEET #
8 OF 20

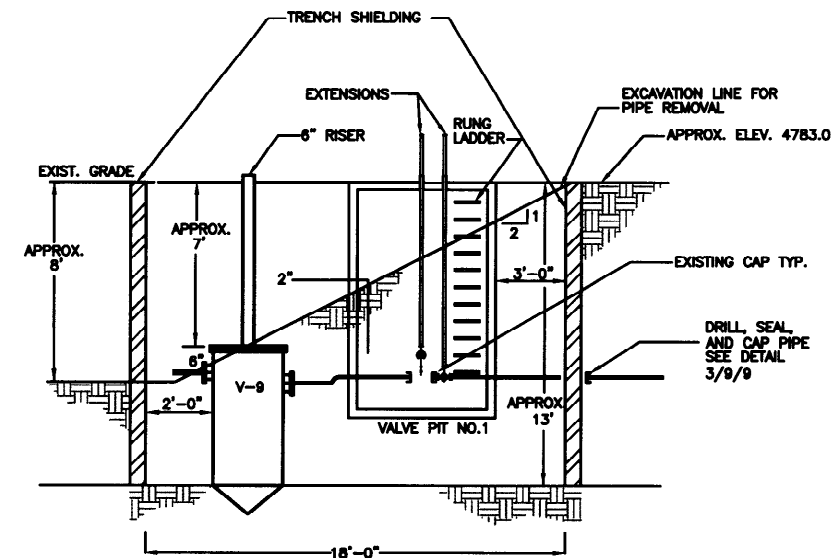


A TYP 10,000 GAL TANK & PIPING REMOVAL SECTION

7,8

SCALE: 1/4"=1'-0"

- NOTE:
1. DIMENSIONS OF EXISTING STRUCTURES, PIPING, AND TANK ARE APPROXIMATE. THESE FEATURES SHALL BE VERIFIED BY EXPLORATORY EXCAVATION. LOCKOUT AND TAG ALL ISOLATION VALVES.
 2. PIPING AND TANKS ARE ASSUMED TO BE STAINLESS STEEL BASED ON AVAILABLE AS-BUILT INFORMATION
 3. VERIFY ELECTRICAL SUPPLY LOCATION. LOCKOUT AND TAG. PER SITE HASP.
 4. ALL PIPE WILL BE EXPOSED AND CUT TO APPROPRIATE LENGTHS.
 5. DEPTH OF BUILDING 818 FOOTING IS ESTIMATED. IF EXCAVATION IS REQUIRED OUTSIDE OF TRENCH SHIELDING AND ADJACENT TO BLDG 818, ACTUAL DEPTH OF FOOTING SHALL BE FIELD VERIFIED.

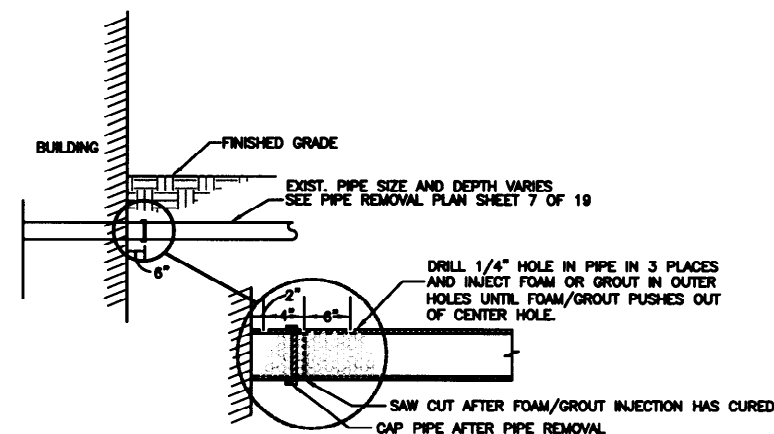


B TANK V-9 EXCAVATION SECTION

7,8

SCALE: 1/4"=1'-0"

- NOTE:
1. VALVE PIT AND PIPING WITHIN VALVE PIT ARE PART OF A VCO PROGRAM. SEE SHEET 7/19 FOR PIPING OUTSIDE OF VALVE PIT. VALVE PIT & PIPELINE SHALL BE REMOVED, PACKAGED, AND DELIVERED TO THE INEL VCO PROGRAM.



C PIPE CUT/SEAL DETAIL

NTS

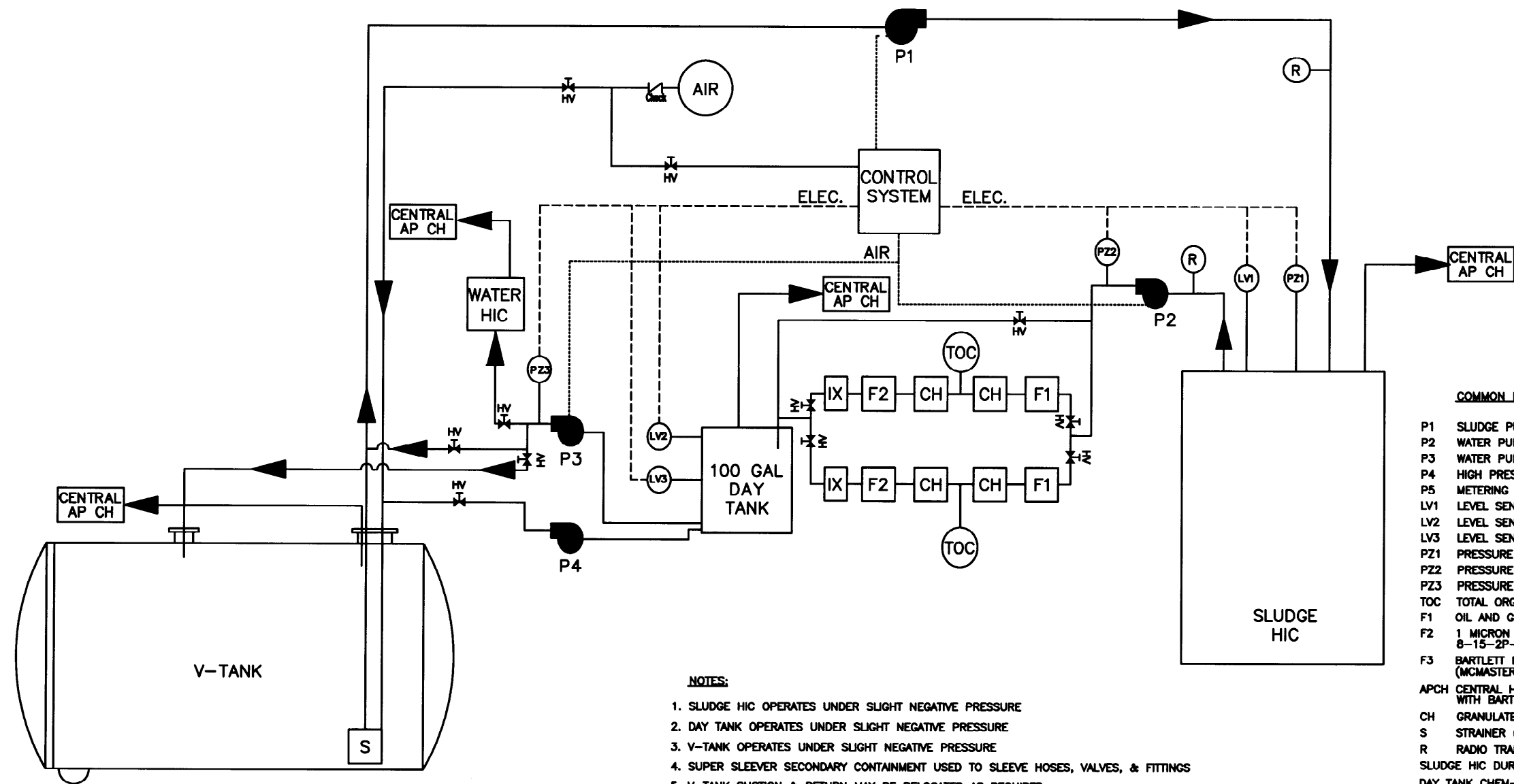


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						Checked by:	D. Brennecke 11/18/01
						Project Manager:	B. Keshian 11/18/01
						Client Approval:	

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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
DEMOLITION & EXCAVATION DETAILS	
DRAWING NO.: ABQ 00007-R00-C07	SHEET #
PROJECT NO.: 12393.002.001	9 OF 20



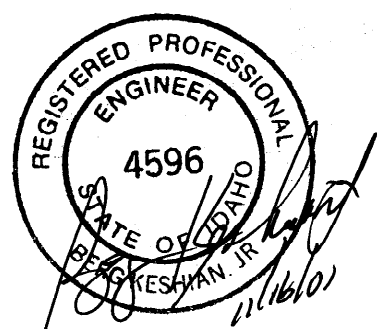
COMMON LEGEND FOR SHTS. 10 - 18

- P1 SLUDGE PUMP (NE-5A BARTLETT MASTER-PUMP)
- P2 WATER PUMP (WILDEN T-4)
- P3 WATER PUMP (WILDEN T-4)
- P4 HIGH PRESSURE PUMP (MCMASTER CARR 3138K26)
- P5 METERING PUMP (NE-5A BARTLETT MASTER-PUMP)
- LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
- LV2 LEVEL SENSOR (MCMASTER CARR PN 48515K81)
- LV3 LEVEL SENSOR (MCMASTER CARR PN 48515K81)
- PZ1 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ2 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMASTER CARR PN 3852K125)
- TOC TOTAL ORGANIC CARBON MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMASTER CARR 4411K65) W/8 GAL/MIN CAPACITY/ELEMENT
- APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
- CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
- S STRAINER (TYPICAL, 3/8")
- R RADIO TRANSCIVING PROCESS DOSIMETER (SAC MODEL PDE-4)
- SLUDGE HIC DURATEK PL8-120-FP-FEDX WITH BUILT IN FILTER UNIT
- DAY TANK CHEM-TAINER (TRANS-100)
- HV HAND VALVE (MCMASTER CARR 47865K21-28)
- WATER HIC DURATEK PL8-120-MT
- IX ION EXCHANGE RESIN

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

- NOTES:**
1. SLUDGE HIC OPERATES UNDER SLIGHT NEGATIVE PRESSURE
 2. DAY TANK OPERATES UNDER SLIGHT NEGATIVE PRESSURE
 3. V-TANK OPERATES UNDER SLIGHT NEGATIVE PRESSURE
 4. SUPER SLEEVER SECONDARY CONTAINMENT USED TO SLEEVE HOSES, VALVES, & FITTINGS
 5. V-TANK SUCTION & RETURN MAY BE RELOCATED AS REQUIRED
 6. CONTROL LOGIC IS AS FOLLOWS:
 - (1.) P1 "ON" IF (SLUDGE HIC LV1 ≠ HIGH) & (SLUDGE HIC PZ1 ≠ HIGH) & (F1 PZ2 ≠ HIGH)
 - (2.) P2 "ON" IF (DAY TANK LV2 ≠ HIGH) & (SLUDGE HIC LV1 ≠ LOW) & (F1 PZ2 ≠ HIGH)
 - (3.) P3 "ON" IF (DAY TANK LV3 ≠ LOW) & (P3 PZ3 ≠ HIGH)
 - (4.) P4 IS MANUALLY OPERATED
 7. SLUDGE CONTENT REMOVAL PROCESS WILL BE REPEATED UNIQUELY FOR EACH V-TANK. SLUDGES FROM RESPECTIVE TANKS WILL NOT BE MIXED DURING SLUDGE REMOVAL PROCESS

V-TANK SLUDGE CONTENT REMOVAL/WATER TREATMENT P & ID DETAIL
NOT TO SCALE

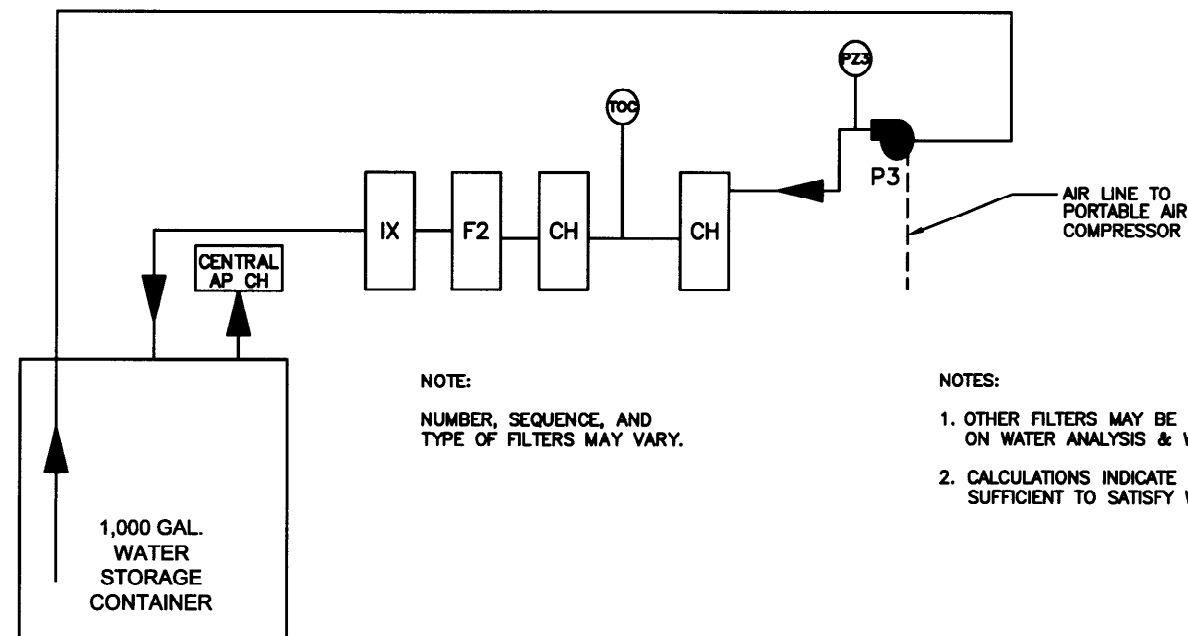


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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
V-TANK SLUDGE CONTENT REMOVAL PROCESS & INSTRUMENTATION DIAGRAM (P & ID)	
DRAWING NO.: ABQ 00008-R00-C08	SHEET #
PROJECT NO.: 12393.002.001	10 OF 20



NOTE:
NUMBER, SEQUENCE, AND
TYPE OF FILTERS MAY VARY.

NOTES:
1. OTHER FILTERS MAY BE REQUIRED DEPENDING
ON WATER ANALYSIS & WAC.
2. CALCULATIONS INDICATE REMOVAL OF VOC
SUFFICIENT TO SATISFY WAC.

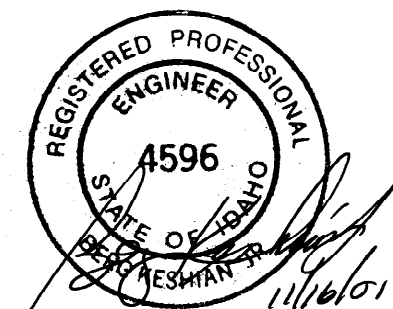
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- P3 WATER PUMP (WILDEN T-4)
- P4 HIGH PRESSURE PUMP (MCMASTER CARR 3138K26)
- P5 METERING PUMP (NE-5A BARTLETT MASTER-PUMP)
- LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
- LV2 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- LV3 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- PZ1 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ2 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMASTER CARR PN 3852K125)
- TOC TOC MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMASTER CARR 4411K65) W/8 GAL/MIN CAPACITY/ELEMENT
- APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
- CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
- S STRAINER (TYPICAL, 3/8")
- R RADIO TRANSCIVING PROCESS DOSIMETER (SAIC MODEL PDE-4)
- SLUDGE HIC DURATEK PL8-120-FP-FEDX WITH BUILT IN FILTER UNIT
- DAY TANK CHEM-TAINER (TRANS-100)
- HV HAND VALVE (MCMASTER CARR 47865K21-28)
- WATER HIC DURATEK PL8-120-MT
- IX ION EXCHANGE RESIN

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

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BARTLETT SERVICES, INC. AND SHALL ONLY BE USED
FOR SUBCONTRACT K01-564442 WITH BBW

V-TANK BACKUP WATER TREATMENT P & ID DETAIL
NOT TO SCALE



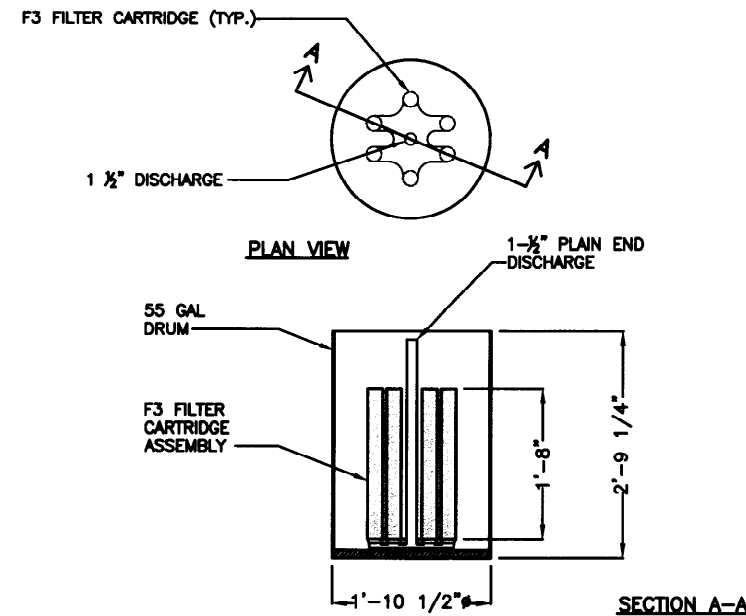
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Revisions						Date	
Rev. No.:	Date:	Descriptions:	Drawn By:	Checked By:	Project A/E:	Approval:	
						Designed by: A. Deereola	11/16/01
						Drawn by: AL/JMM	11/16/01
						Checked by: D. Brennecke	11/16/01
						Project Manager: B. Keshion	11/16/01
						Client Approval:	

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V-TANK REMEDIATION PROJECT
IDAHO FALLS, IDAHO
**V-TANK WATER TREATMENT
PROCESS & INSTRUMENTATION
(P & ID) DETAILS**

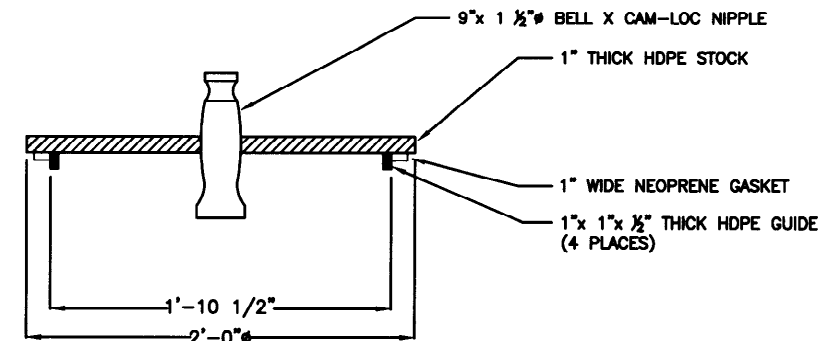
DRAWING NO.: ABQ 00013-R00-C09
PROJECT NO.: 12393.002.001
SHEET # **11 OF 20**



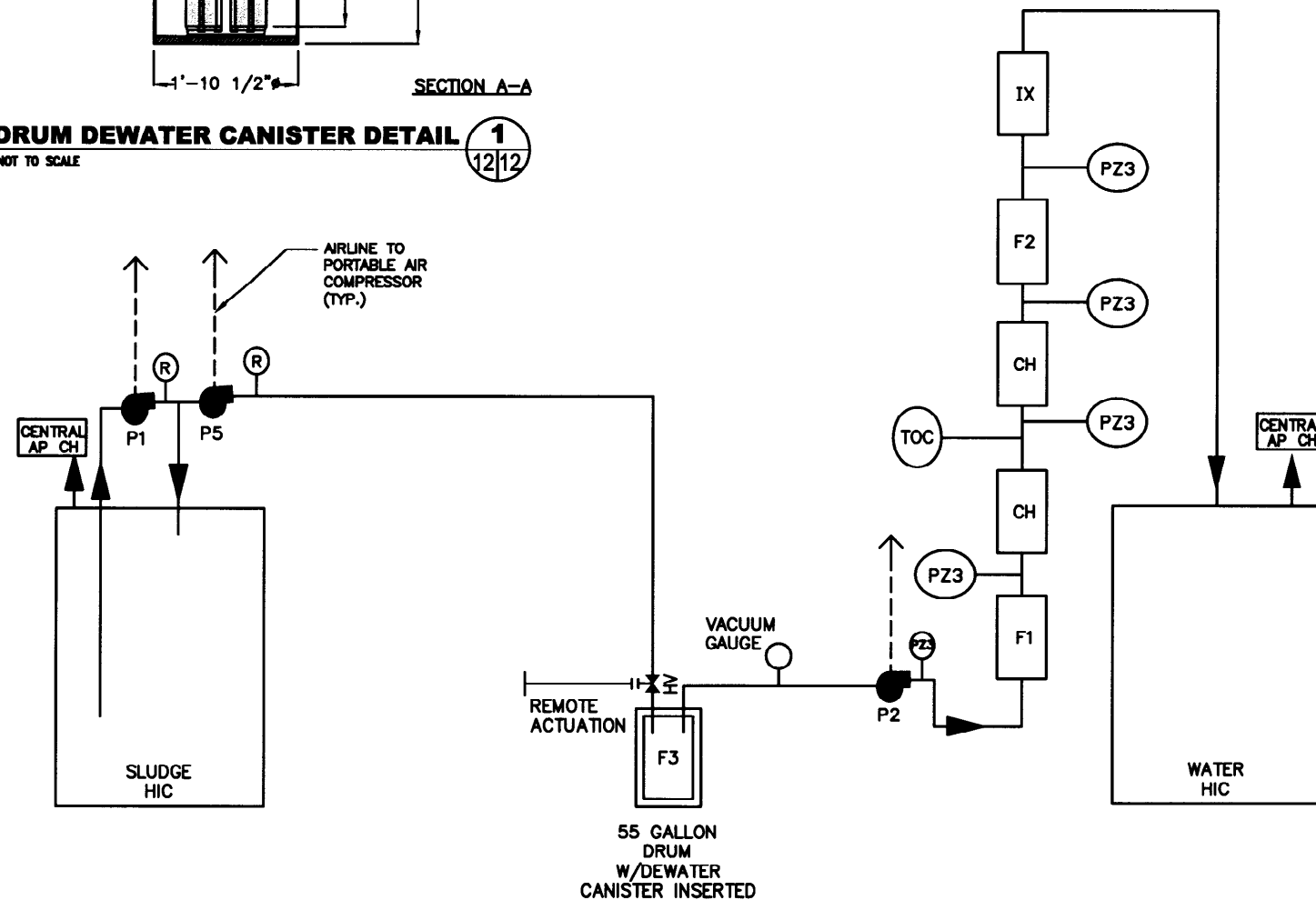
DRUM DEWATER CANISTER DETAIL 1
NOT TO SCALE

NOTES:

1. F3 CARTRIDGES MAY BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY DEPENDING ON MOCK UP TESTING. THE F3 FILTER CARTRIDGE ASSEMBLY WILL BE FABRICATED WITH A COLLECTION MANIFOLD AND DISCHARGE SYSTEM. CARTRIDGE ASSEMBLY WILL BE INSERTED INTO DRUM.
2. AFTER DRUM HAS BEEN FILLED TO DESIGNATED LEVEL, DEWATERING LID WILL BE PLACED ON DRUM SO SPECIFIED VACUUM CAN BE APPLIED.



DRUM DEWATERING LID DETAIL 2
NOT TO SCALE

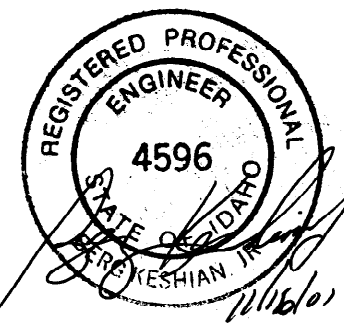


V-TANK DRUM FILLING & DEWATERING P&ID DETAIL 3
NOT TO SCALE

COMMON LEGEND FOR SHTS. 10 - 18

- P1 SLUDGE PUMP (NE-5A BARTLETT MASTER-PUMP)
- P2 WATER PUMP (WILDEN T-4)
- P3 WATER PUMP (WILDEN T-4)
- P4 HIGH PRESSURE PUMP (MCMASTER CARR 3138K26)
- P5 METERING PUMP (NE-5A BARTLETT MASTER-PUMP)
- LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
- LV2 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- LV3 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- PZ1 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ2 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMASTER CARR PN 3852K125)
- TOC TOC MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMASTER CARR 4411K65) W/8 GAL/MIN CAPACITY/ELEMENT
- APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
- CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
- S STRAINER (TYPICAL, 3/8")
- R RADIO TRANSCENDING PROCESS DOSIMETER (SAIC MODEL PDE-4)
- SLUDGE HIC DURATEX PLB-120-FP-FEDX WITH BUILT IN FILTER UNIT
- DAY TANK CHEM-TAINER (TRANS-100)
- HV HAND VALVE (MCMASTER CARR 47865K21-28)
- WATER HIC DURATEX PLB-120-MT
- IX ION EXCHANGE RESIN

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.



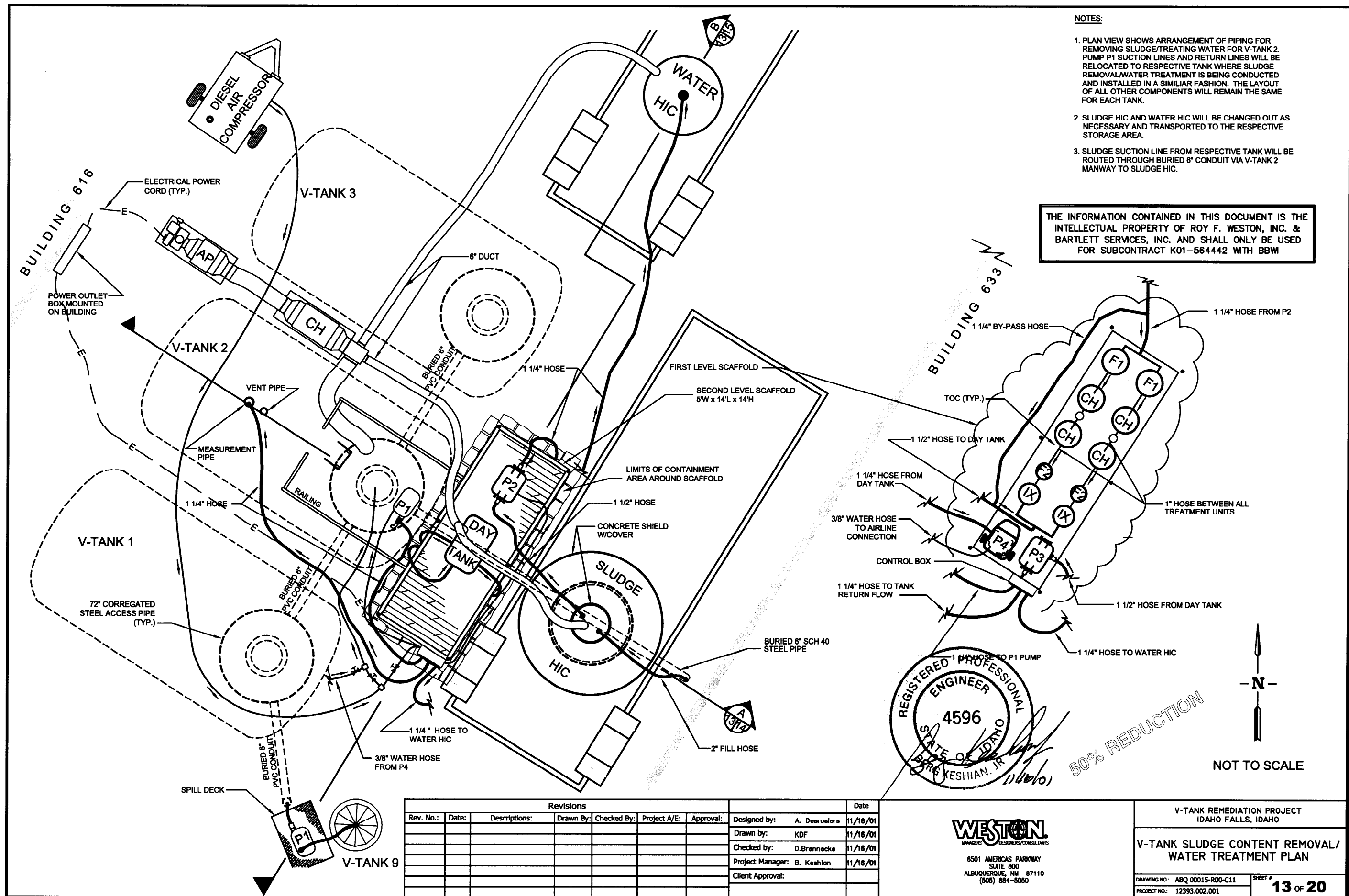
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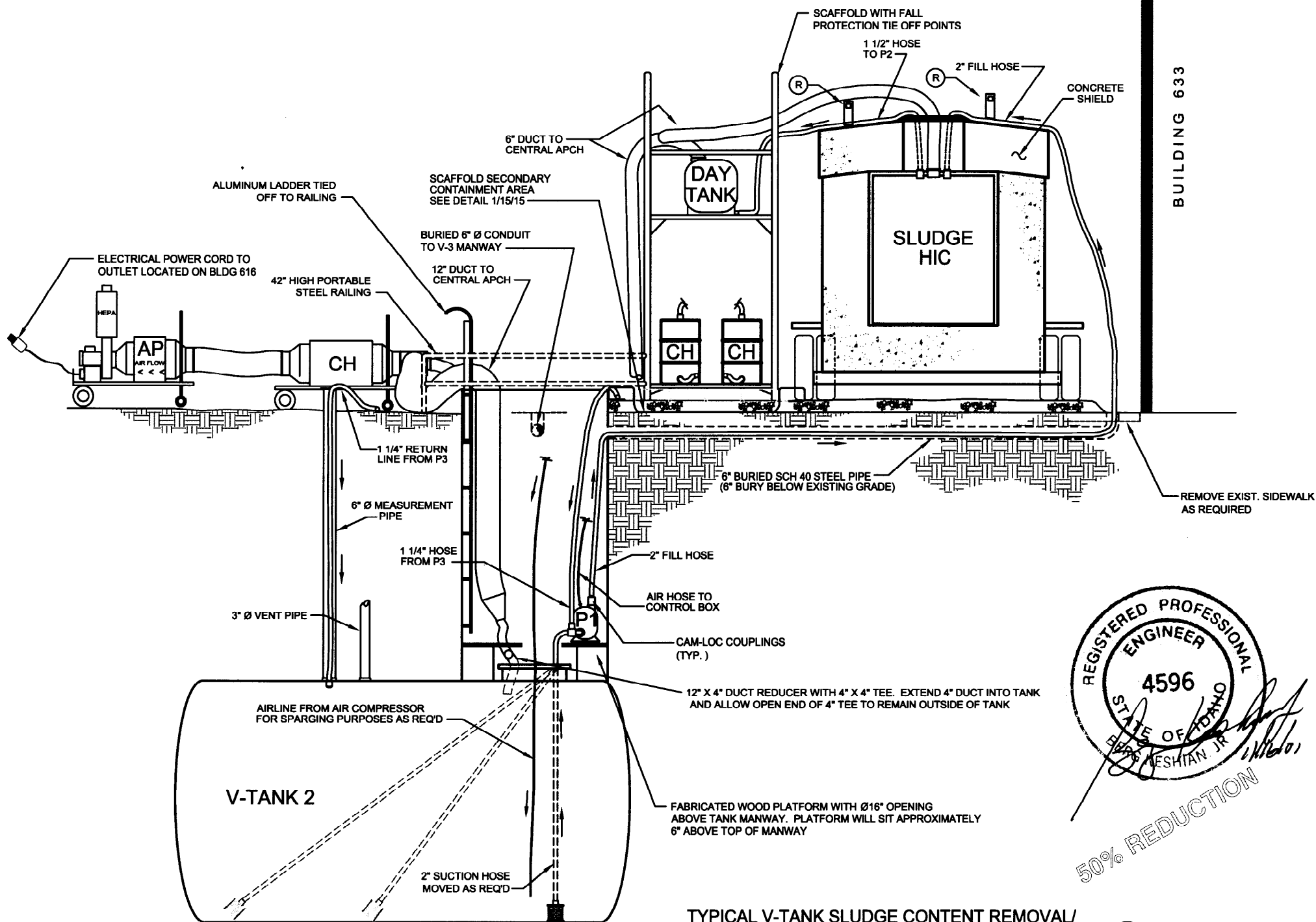
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Revisions							Date
Rev. No.:	Date:	Descriptions:	Drawn By:	Checked By:	Project A/E:	Approval:	
						Designed by: A. Desrosiers	11/16/01
						Drawn by: JMM/KDF	11/16/01
						Checked by: D. Brennecke	11/16/01
						Project Manager: B. Keshian	11/16/01
						Client Approval:	

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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
V-TANK DRUM FILLING & DEWATERING PROCESS AND INSTRUMENTATION DIAGRAM (P & ID)	
DRAWING NO.: ABQ 00014-R00-C10	SHEET #
PROJECT NO.: 12393.002.001	12 OF 20





COMMON LEGEND FOR SHTS. 10-18

- P1 SLUDGE PUMP (NE-5A BARTLETT MASTER-PUMP)
- P2 WATER PUMP (WILDEN T-4)
- P3 WATER PUMP (WILDEN T-4)
- P4 HIGH PRESSURE PUMP (MCMASTER CARR 3138K26)
- P5 METERING PUMP (NE-5A BARTLETT MASTER-PUMP)
- LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
- LV2 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- LV3 LEVEL SENSOR (MCMASTER CARR PN 46515K81)
- PZ1 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ2 PRESSURE SENSOR (MCMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMASTER CARR PN 3852K125)
- TOC TOC MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2\"/>

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

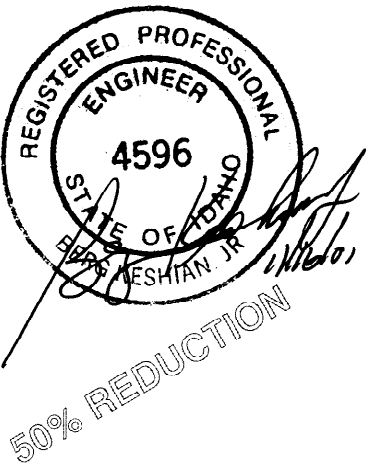
NOTES:

1. ALL SLUDGE & WATER HOSE CONNECTIONS TO PUMPS, DRUMS, FILTERS, TANKS, HICS, VALVES, AND OTHER HOSES ARE FIBERGLASS REINFORCED NYLON CAM-LOC COUPLINGS.
2. SEE SHEET 10 OF 19 FOR SLUDGE CONTENT REMOVAL/ WATER TREATMENT P & ID. LOCATION OF LEVEL & PRESSURE SENSORS ARE SHOWN ON P & ID ALONG WITH OPERATING CONTROL LOGIC FOR EACH.
3. BEFORE SLUDGE HIC IS CHANGED OUT, WATER FROM V-TANK BEING PROCESSED WILL BE ADDED BACK IN TO SLUDGE HIC IN AN AMOUNT THAT WILL FACILITATE TRANSFERING OF SLUDGE TO DRUMS.
4. ESTIMATE OF MAXIMUM RADIOLOGIC EXPOSURE DOSE RATES BASED ON AVERAGE SLUDGE CONCENTRATIONS ARE AS FOLLOWS (SEE CALCULATION ABQ01-HP001):

EQUIPMENT TYPE	@ CONTACT (mR/hr)	@ 100 cm (mR/hr)
Pumps	1288	6.8
Hoses	659	21.3

TYPICAL V-TANK SLUDGE CONTENT REMOVAL/
WATER TREATMENT PROFILE SCHEMATIC DETAIL

NOT TO SCALE



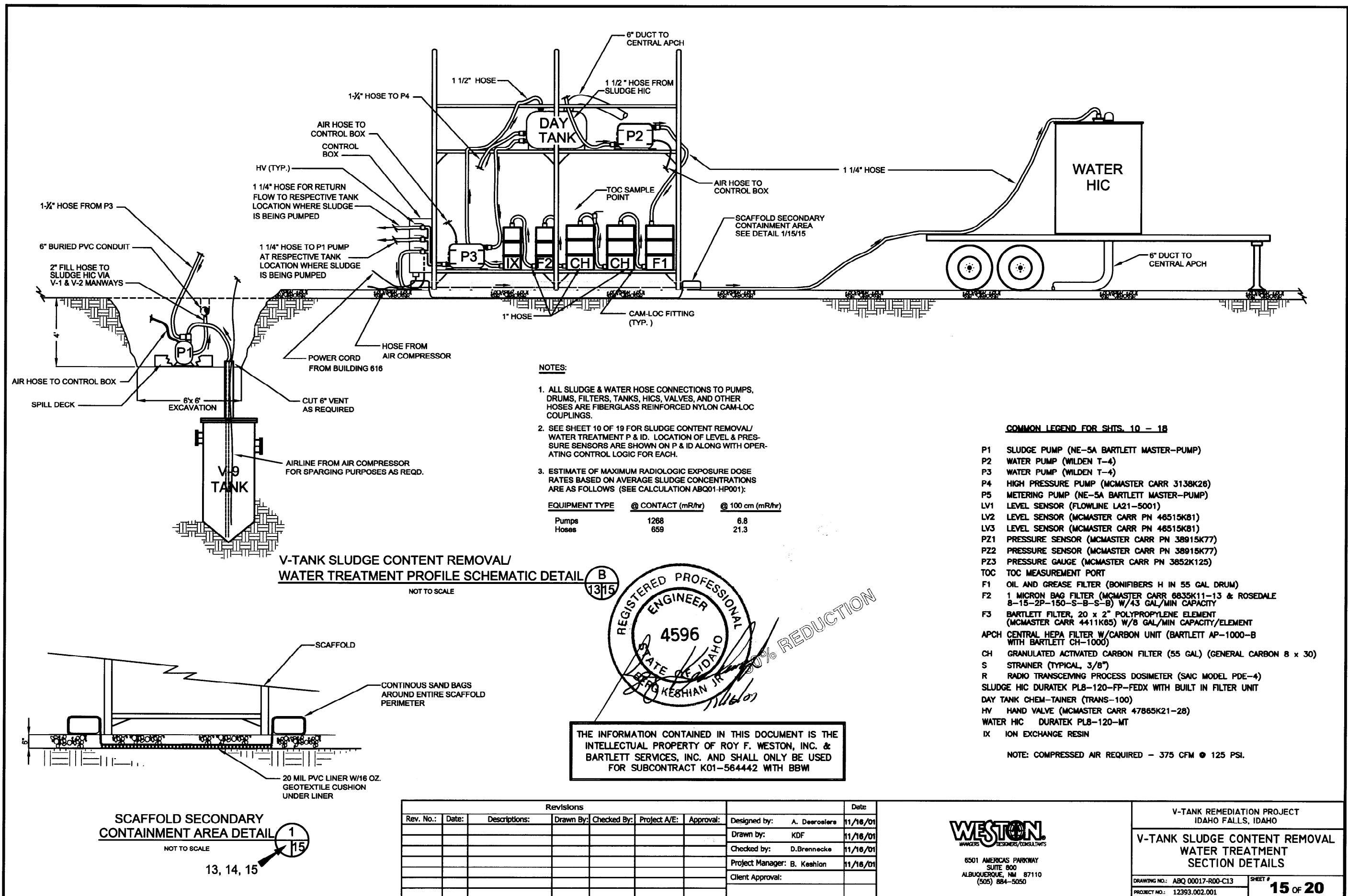
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Revisions							Date
Rev. No.	Date	Descriptions	Drawn By	Checked By	Project A/E	Approval	
						Designed by: A. Dearosiera	11/16/01
						Drawn by: KDF	11/16/01
						Checked by: D. Brennecke	11/16/01
						Project Manager: B. Keshian	11/16/01
						Client Approval:	

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V-TANK REMEDIATION PROJECT
IDAHO FALLS, IDAHO
V-TANK SLUDGE CONTENT REMOVAL
WATER TREATMENT
SECTION DETAILS

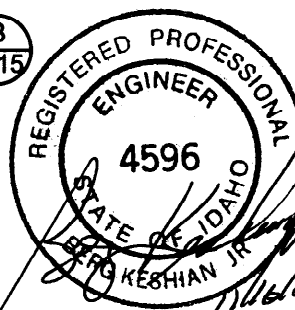
DRAWING NO.: ABQ 00016-R00-C12
PROJECT NO.: 12393.002.001
SHEET # **14 OF 20**



NOTES:

- ALL SLUDGE & WATER HOSE CONNECTIONS TO PUMPS, DRUMS, FILTERS, TANKS, HICS, VALVES, AND OTHER HOSES ARE FIBERGLASS REINFORCED NYLON CAM-LOC COUPLINGS.
- SEE SHEET 10 OF 19 FOR SLUDGE CONTENT REMOVAL/WATER TREATMENT P & ID. LOCATION OF LEVEL & PRESSURE SENSORS ARE SHOWN ON P & ID ALONG WITH OPERATING CONTROL LOGIC FOR EACH.
- ESTIMATE OF MAXIMUM RADIOLOGIC EXPOSURE DOSE RATES BASED ON AVERAGE SLUDGE CONCENTRATIONS ARE AS FOLLOWS (SEE CALCULATION ABQ01-HP001):

EQUIPMENT TYPE	@ CONTACT (mR/hr)	@ 100 cm (mR/hr)
Pumps	1268	6.8
Hoses	659	21.3



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COMMON LEGEND FOR SHTS. 10 - 18

- P1 SLUDGE PUMP (NE-SA BARTLETT MASTER-PUMP)
- P2 WATER PUMP (WILDEN T-4)
- P3 WATER PUMP (WILDEN T-4)
- P4 HIGH PRESSURE PUMP (MCMMASTER CARR 3138K26)
- P5 METERING PUMP (NE-SA BARTLETT MASTER-PUMP)
- LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
- LV2 LEVEL SENSOR (MCMMASTER CARR PN 46515K81)
- LV3 LEVEL SENSOR (MCMMASTER CARR PN 46515K81)
- PZ1 PRESSURE SENSOR (MCMMASTER CARR PN 38915K77)
- PZ2 PRESSURE SENSOR (MCMMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMMASTER CARR PN 3852K125)
- TOC TOC MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMMASTER CARR 4411K85) W/8 GAL/MIN CAPACITY/ELEMENT
- APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
- CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
- S STRAINER (TYPICAL, 3/8")
- R RADIO TRANSCENDING PROCESS DOSIMETER (SAIC MODEL PDE-4)
- SLUDGE HIC DURATEK PL8-120-FP-FEDX WITH BUILT IN FILTER UNIT
- DAY TANK CHEM-TAINER (TRANS-100)
- HV HAND VALVE (MCMMASTER CARR 47865K21-28)
- WATER HIC DURATEK PL8-120-MT
- IX ION EXCHANGE RESIN

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

SCAFFOLD SECONDARY CONTAINMENT AREA DETAIL

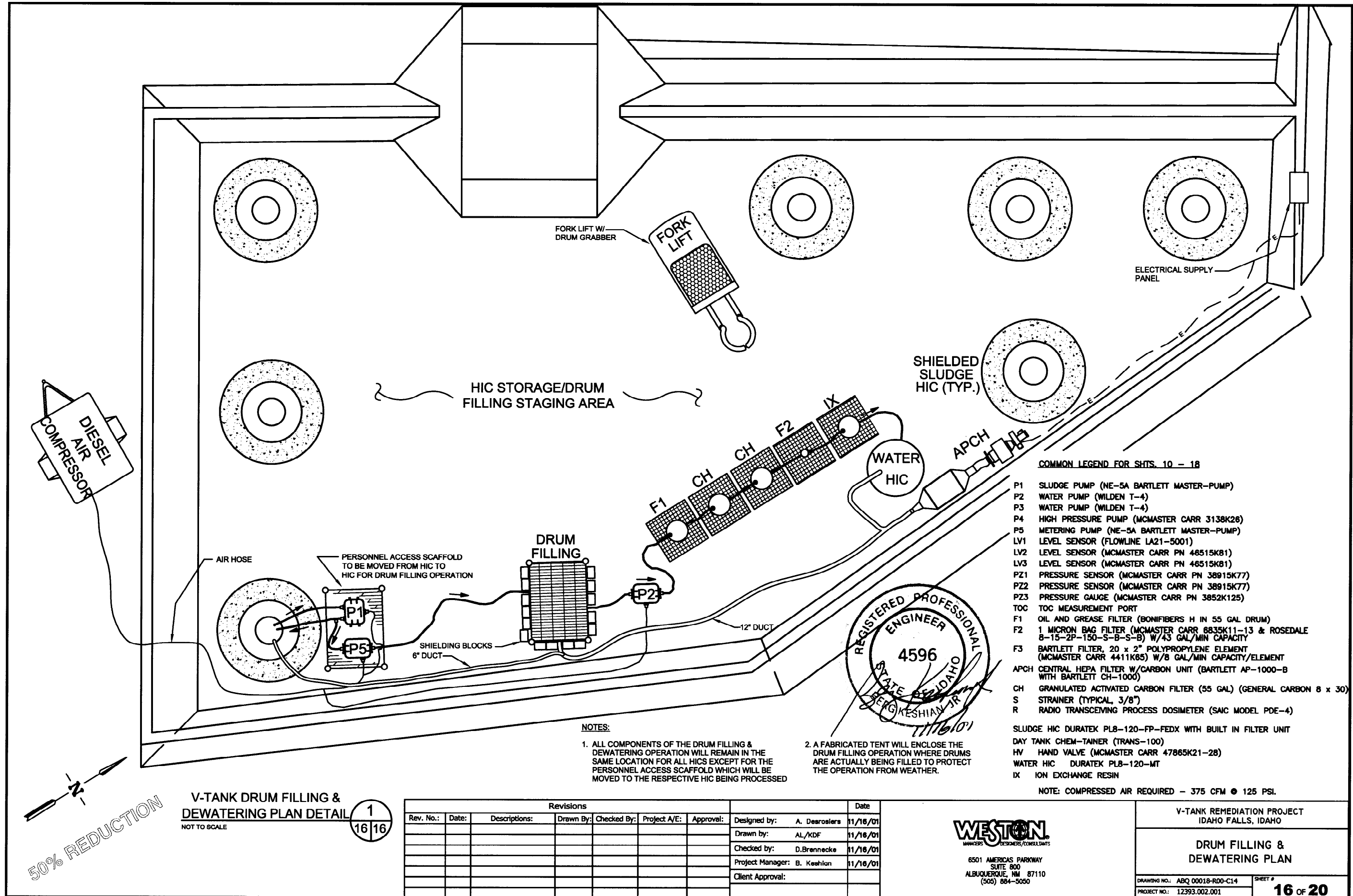
NOT TO SCALE

13, 14, 15

Revisions							Date
Rev. No.	Date	Descriptions	Drawn By	Checked By	Project A/E	Approval	

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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
V-TANK SLUDGE CONTENT REMOVAL WATER TREATMENT SECTION DETAILS	
DRAWING NO.: ABQ 00017-R00-C13	SHEET #
PROJECT NO.: 12393.002.001	15 OF 20



- COMMON LEGEND FOR SHTS. 10 - 18
- P1 SLUDGE PUMP (NE-5A BARTLETT MASTER-PUMP)
 - P2 WATER PUMP (WILDEN T-4)
 - P3 WATER PUMP (WILDEN T-4)
 - P4 HIGH PRESSURE PUMP (MCMaster CARR 3138K26)
 - P5 METERING PUMP (NE-5A BARTLETT MASTER-PUMP)
 - LV1 LEVEL SENSOR (FLOWLINE LA21-5001)
 - LV2 LEVEL SENSOR (MCMaster CARR PN 48515K81)
 - LV3 LEVEL SENSOR (MCMaster CARR PN 48515K81)
 - PZ1 PRESSURE SENSOR (MCMaster CARR PN 38915K77)
 - PZ2 PRESSURE SENSOR (MCMaster CARR PN 38915K77)
 - PZ3 PRESSURE GAUGE (MCMaster CARR PN 3852K125)
 - TOC TOC MEASUREMENT PORT
 - F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
 - F2 1 MICRON BAG FILTER (MCMaster CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
 - F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMaster CARR 4411K65) W/8 GAL/MIN CAPACITY/ELEMENT
 - APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
 - CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
 - S STRAINER (TYPICAL, 3/8")
 - R RADIO TRANSCIVING PROCESS DOSIMETER (SAIC MODEL PDE-4)
- SLUDGE HIC DURATEK PL8-120-FP-FEDX WITH BUILT IN FILTER UNIT
DAY TANK CHEM-TAINER (TRANS-100)
HV HAND VALVE (MCMaster CARR 47865K21-28)
WATER HIC DURATEK PL8-120-MT
IX ION EXCHANGE RESIN
- NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

NOTES:

1. ALL COMPONENTS OF THE DRUM FILLING & DEWATERING OPERATION WILL REMAIN IN THE SAME LOCATION FOR ALL HICS EXCEPT FOR THE PERSONNEL ACCESS SCAFFOLD WHICH WILL BE MOVED TO THE RESPECTIVE HIC BEING PROCESSED
2. A FABRICATED TENT WILL ENCLOSE THE DRUM FILLING OPERATION WHERE DRUMS ARE ACTUALLY BEING FILLED TO PROTECT THE OPERATION FROM WEATHER.



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V-TANK DRUM FILLING & DEWATERING PLAN DETAIL 1 16/16

NOT TO SCALE

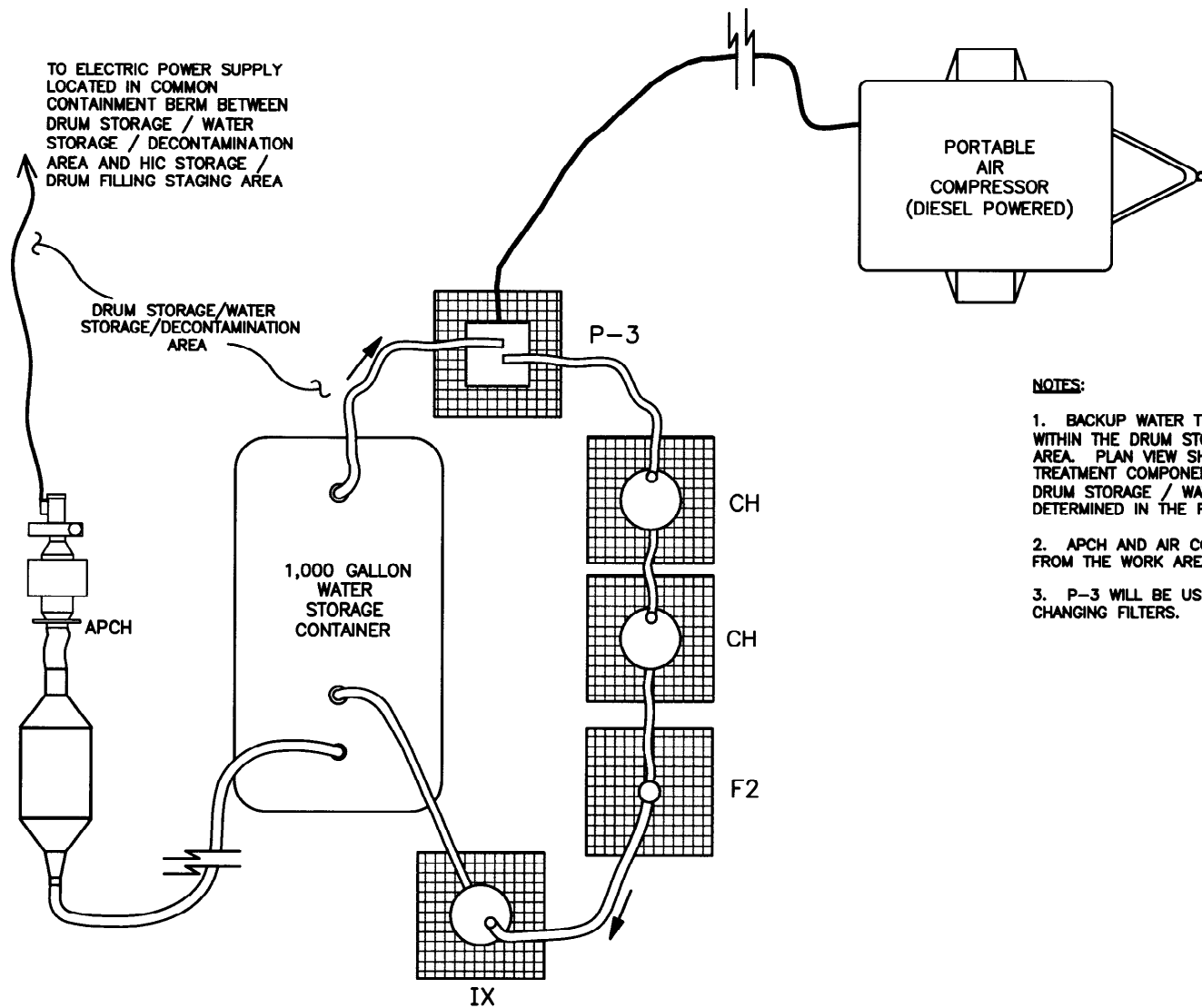
Revisions							Date	
Rev. No.:	Date:	Descriptions:	Drawn By:	Checked By:	Project A/E:	Approval:		

Designed by:	A. Desrosiers	11/16/01
Drawn by:	AL/KDF	11/16/01
Checked by:	D. Brennecke	11/16/01
Project Manager:	B. Keshian	11/16/01
Client Approval:		

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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(505) 884-5050

V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
DRUM FILLING & DEWATERING PLAN	
DRAWING NO.: ABQ 00018-R00-C14	SHEET #
PROJECT NO.: 12393.002.001	16 OF 20

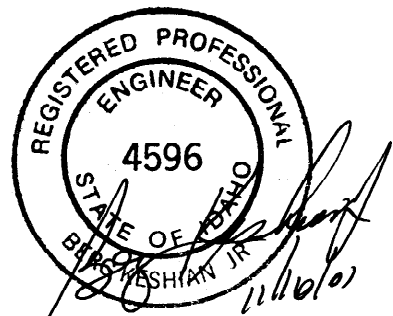


V-TANK BACKUP WATER
TREATMENT PLAN VIEW DETAIL 1
NOT TO SCALE 1818

NOTES:

1. BACKUP WATER TREATMENT OPERATIONS WILL BE CONDUCTED WITHIN THE DRUM STORAGE / WATER STORAGE DECONTAMINATION AREA. PLAN VIEW SHOWS GENERAL RELATIONSHIP BETWEEN TREATMENT COMPONENTS. ACTUAL LOCATION AND ORIENTATION WITHIN DRUM STORAGE / WATER STORAGE DECONTAMINATION AREA WILL BE DETERMINED IN THE FIELD.
2. APCH AND AIR COMPRESSOR MAY BE POSITIONED UP TO 200' FROM THE WORK AREA FOR NOISE CONSIDERATIONS.
3. P-3 WILL BE USED TO PURGE AIR THROUGH HOSES PRIOR TO CHANGING FILTERS.

FILTER LINES ARE 1" HOSE
FITTINGS ON ALL TANKS, PUMPS,
HOSES, & FILTERS, ETC. WILL BE
FIBERGLASS REINFORCED NYLON,
CAM & GROOVE TYPE



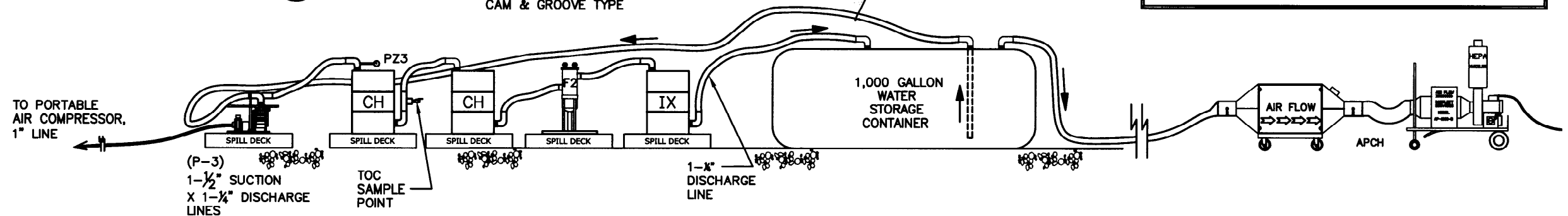
COMMON LEGEND FOR SHTS. 10 - 18

- P1 SLUDGE PUMP (NE-5A BARTLETT MASTER-PUMP)
- P2 WATER PUMP (WILDEN T-4)
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- P4 HIGH PRESSURE PUMP (MCMMASTER CARR 3138K26)
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- LV3 LEVEL SENSOR (MCMMASTER CARR PN 48515K81)
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- PZ2 PRESSURE SENSOR (MCMMASTER CARR PN 38915K77)
- PZ3 PRESSURE GAUGE (MCMMASTER CARR PN 3852K125)
- TOC TOC MEASUREMENT PORT
- F1 OIL AND GREASE FILTER (BONIFIBERS H IN 55 GAL DRUM)
- F2 1 MICRON BAG FILTER (MCMMASTER CARR 6835K11-13 & ROSEDALE 8-15-2P-150-S-B-S-B) W/43 GAL/MIN CAPACITY
- F3 BARTLETT FILTER, 20 x 2" POLYPROPYLENE ELEMENT (MCMMASTER CARR 4411K65) W/8 GAL/MIN CAPACITY/ELEMENT
- APCH CENTRAL HEPA FILTER W/CARBON UNIT (BARTLETT AP-1000-B WITH BARTLETT CH-1000)
- CH GRANULATED ACTIVATED CARBON FILTER (55 GAL) (GENERAL CARBON 8 x 30)
- S STRAINER (TYPICAL, 3/8")
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- SLUDGE HIC DURATEK PLB-120-FP-FEDX WITH BUILT IN FILTER UNIT
- DAY TANK CHEM-TAINER (TRANS-100)
- HV HAND VALVE (MCMMASTER CARR 47865K21-28)
- WATER HIC DURATEK PLB-120-MT
- 1X ION EXCHANGE RESIN

NOTE: COMPRESSED AIR REQUIRED - 375 CFM @ 125 PSI.

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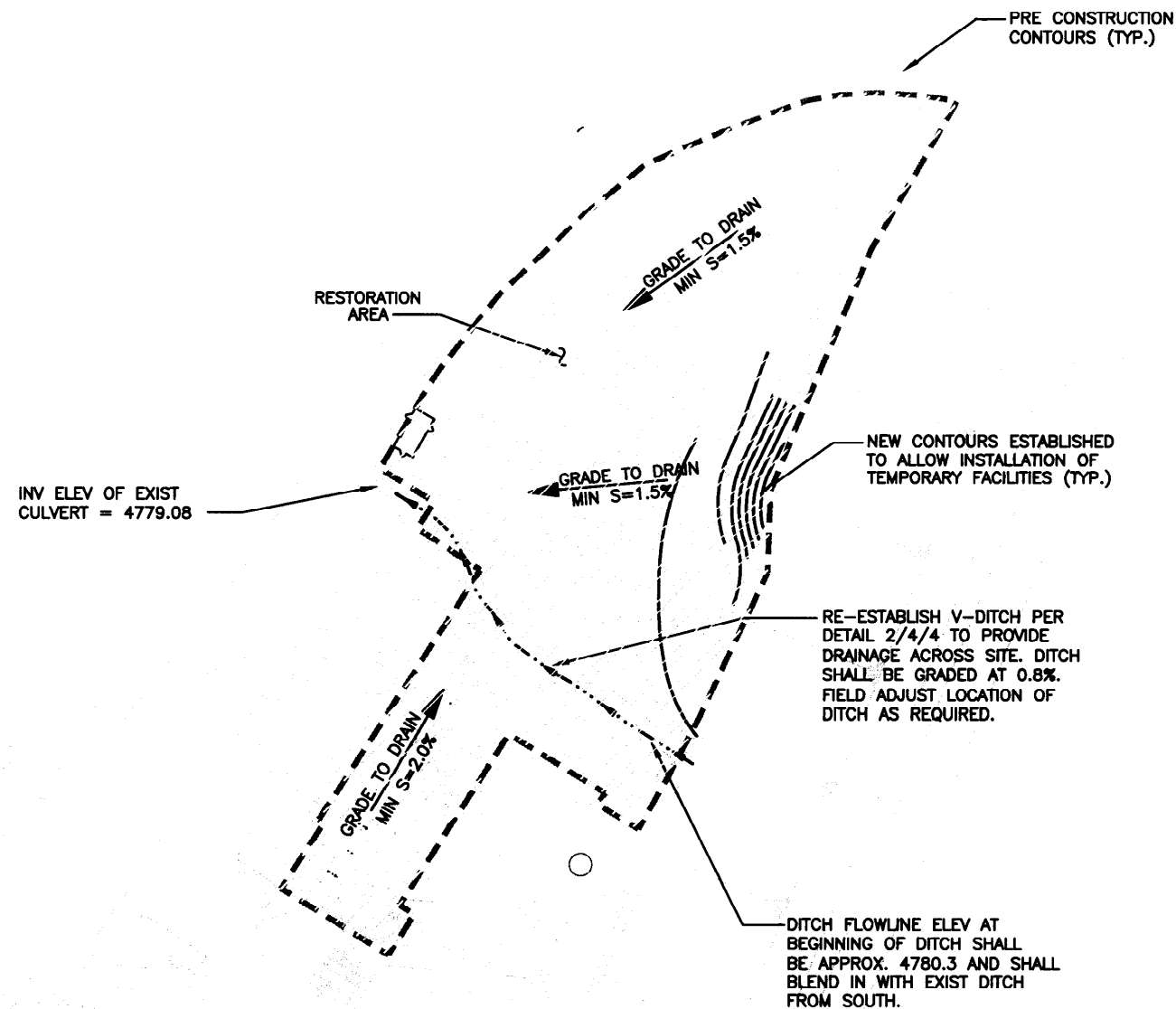
V-TANK BACKUP WATER
TREATMENT PROFILE SCHEMATIC DETAIL 2
NOT TO SCALE 1818

Revisions							Date
Rev. No.	Date	Descriptions	Drawn By	Checked By	Project A/E	Approval	

Designed by: A. Desrosier 11/16/01
 Drawn by: AL 11/16/01
 Checked by: D. Brennecke 11/16/01
 Project Manager: B. Keshian 11/16/01
 Client Approval:

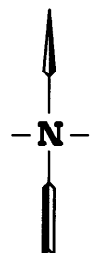
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 SUITE 800
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 (505) 884-5050

V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
BACKUP WATER TREATMENT PLAN AND SECTION DETAILS	
DRAWING NO.: ABQ 00019-R00-C16 PROJECT NO.: 12393.002.001	SHEET # 18 OF 20

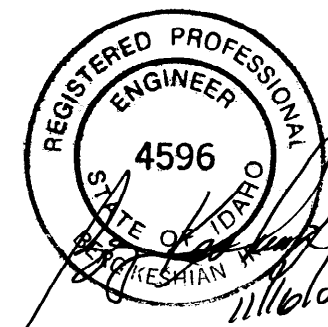
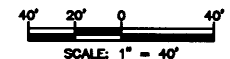


GENERAL NOTES:

1. SITE PLAN REPRESENTS FINAL CONDITION OF SITE AT COMPLETION OF REMEDIAL ACTION PROJECT.
2. ALL TEMPORARY FACILITIES INSTALLED BY THE SUBCONTRACTOR SHALL BE REMOVED
3. ALL ROADBASE MATERIAL PLACED SHALL BE REMOVED AND SITE SHALL BE REGRADED TO DRAIN AS SHOWN ON PLAN.
4. DISTURBED AREAS SHALL BE BACKFILLED AND REGRADED TO GENERALLY MATCH PRE-CONSTRUCTION CONTOURS AND MINIMUM GRADES SHOWN ON DRAWING.
5. ALL DISTURBED AREAS SHALL BE RE-SEEDING PER THE SPECIFICATIONS.
6. BENCHMARK FOR SURVEY CONTROL WILL BE ESTABLISHED BY INEEL PERSONNEL.



50% REDUCTION



Revisions						Date
Rev. No.:	Date:	Descriptions:	Drawn By:	Checked By:	Project A/E:	Approval:

Designed by:	R. Ederer	11/16/01
Drawn by:	JMM/KDF	11/16/01
Checked by:	D.Brennecke	11/16/01
Project Manager:	B. Keshian	11/16/01
Client Approval:		

WESTON
MANAGERS DESIGNERS/CONSULTANTS

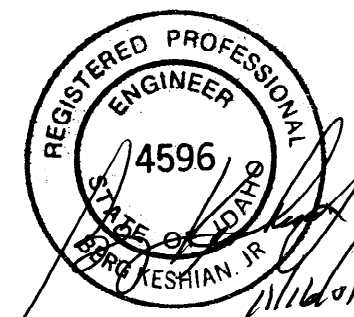
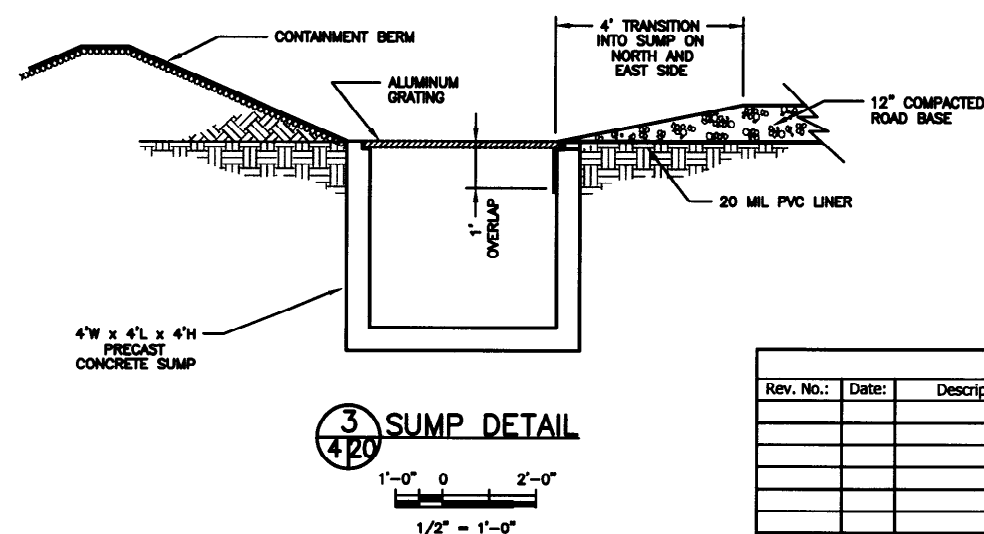
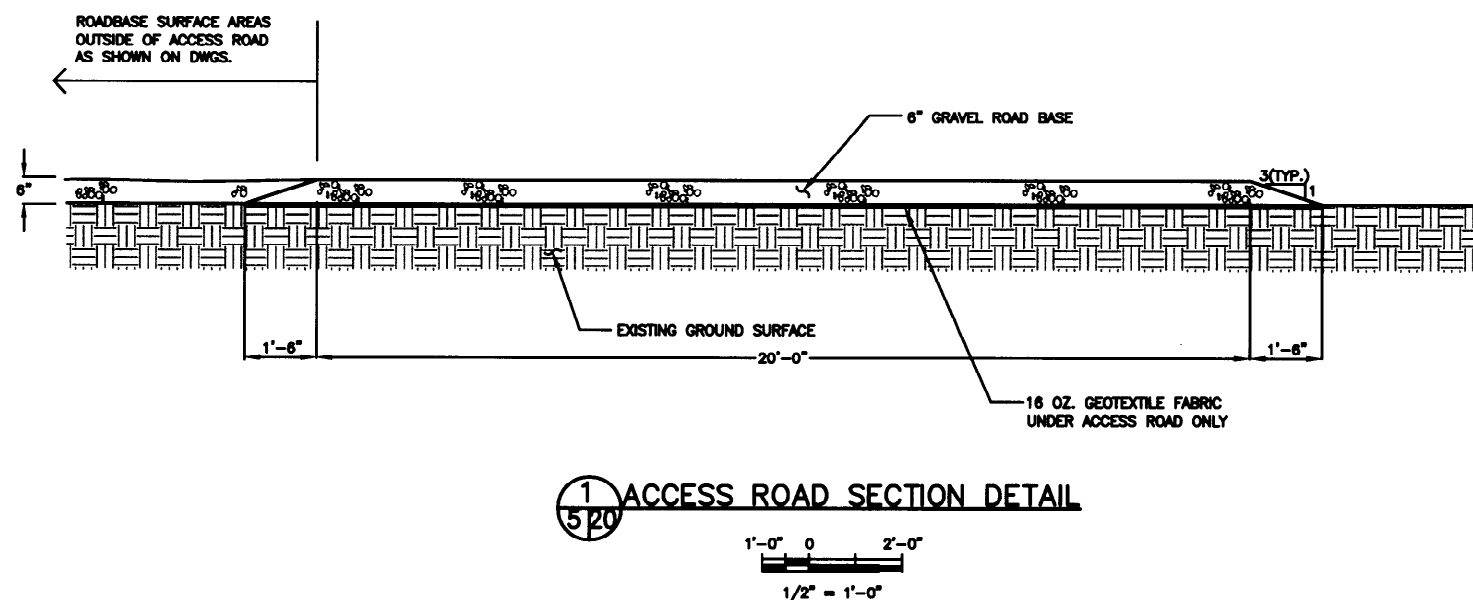
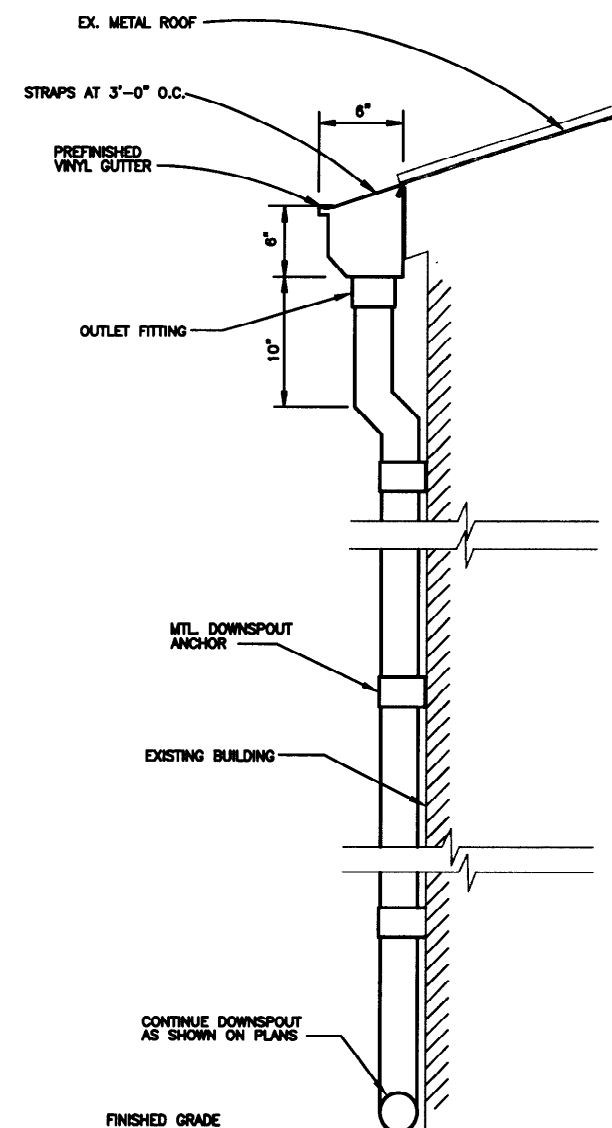
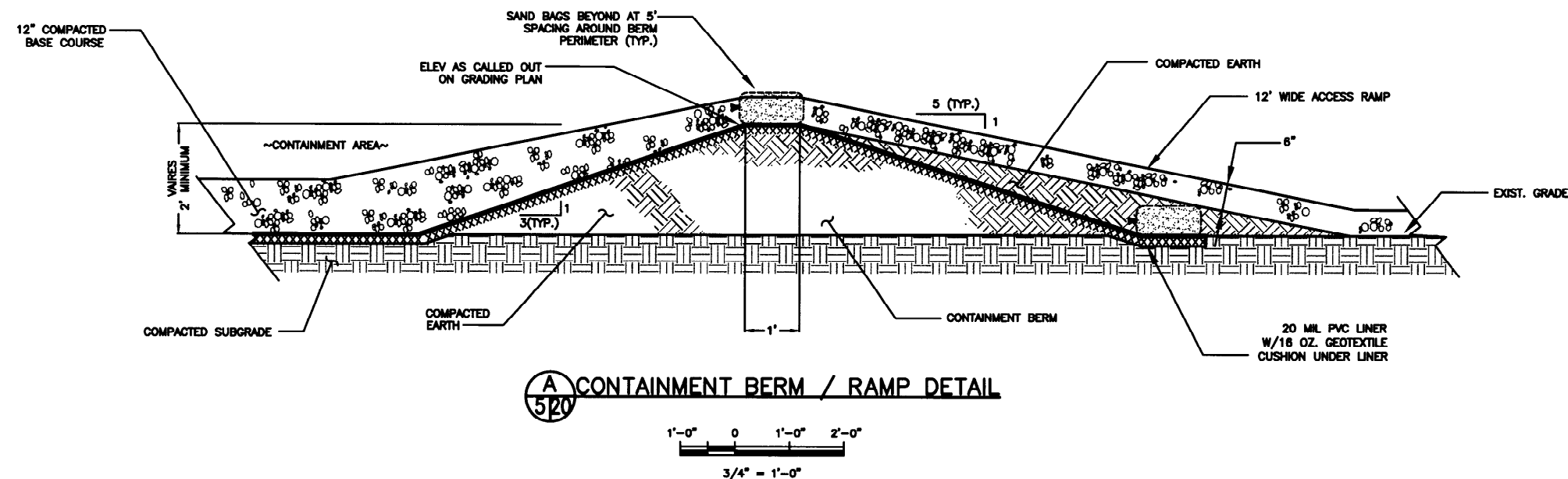
6501 AMERICAS PARKWAY
SUITE 800
ALBUQUERQUE, NM 87110
(505) 884-5050

V-TANK REMEDIATION PROJECT
IDAHO FALLS, IDAHO

SITE RESTORATION PLAN

DRAWING NO.: ABQ 00009-R00-C17
PROJECT NO.: 12393.002.001

SHEET # **19** OF **20**



50% REDUCTION

Revisions						Date
Rev. No.:	Date:	Descriptions:	Drawn By:	Checked By:	Project A/E:	Approval:
						Designed by: R. Ederer 11/16/01
						Drawn by: JMM/KDF 11/16/01
						Checked by: D. Brennecke 11/16/01
						Project Manager: B. Keshian 11/16/01
						Client Approval:

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V-TANK REMEDIATION PROJECT IDAHO FALLS, IDAHO	
MISCELLANEOUS DETAILS	
DRAWING NO.: ABQ 00010-R00-C18 PROJECT NO.: 12393.002.001	SHEET # 20 OF 20